



NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY, PHILIPPINES (NAST PHIL)

2015 Annual Report



a progressive Philippines anchored on science

ISSN-0119-4267
National Academy of Science and Technology, Annual Report 2015

Published by the National Academy of Science and Technology, Philippines (NAST PHL)
3rd Level, Science Heritage Building
DOST Compound, Gen. Santos Avenuez
Bicutan, Taguig City 1631 Philippines
Email: secretariat@nast.ph
Website: <http://www.nast.ph>
Tel. Nos. (632) 837 2071 local 2170-75; (632) 838-7766; 7739; 7792
Fax.No. (632) 837 3170

Editor : **Academician Evelyn Mae Tecson-Mendoza**

Staff-in-charge: **Guada B. Ramos-Dimaya, Reihvella A. Perez, and
Rowena Villapeña-Briones**

Contributors: Ms. Luningning E. Samarita-Domingo, Guada B. Ramos-Dimaya,
Rowena Villapeña-Briones, Charyl C. Apuyan, Reihvella A. Perez,
Zenaida T. Mapua, Virginia Francia O. Gavica, and
Eufemia Mae P. Ferreras

Printed by: LJB Printing Services
39-B Mapagmahal Street, Brgy. Pinyahan, Quezon City
Tel. No. (632) 4260495 Tel/Fax No.: (632) 4332094

Printed in the Philippines

Table of Contents

PRESIDENT' S MESSAGE	<i>iii</i>
EXECUTIVE SUMMARY	<i>iv</i>
VISION, MISSION, MANDATE	<i>v</i>
RECOGNITION FUNCTION	1
National Scientist Rank and Title	2
Membership to the Academy	4
NAST Awards	
Outstanding Young Scientists	6
TWAS Prize for Young Scientist in the Philippines	9
NAST Environmental Science Award	10
NAST Talent Search for Young Scientists	11
Outstanding Books/Monographs	12
Outstanding Scientific Papers	13
NSTW Awards	
The Outstanding Technology Commercialization Award (Gregorio Y. Zara Medal)	14
The Outstanding Research and Development Award Eduardo A. Quisumbing Medal for basic research Julian A. Banzon Medal for applied research	15
The Outstanding Science Administrator Award (Dioscoro L. Umali Medal)	16
Magsaysay Future Engineers/Technologists Award	17
Benefits of Academicians and National Scientists	18
In Memoriam	19
Scientific Career System	20

ADVISORY FUNCTION	23
37 th Annual Scientific Meeting	24
On Bills and Proposed Policies	29
Pre-ASM Discussions and Consultations	30
Roundtable Discussions and Fora	33
Lectures, Conferences, Summit	41
Launching of the NAST 40 th Anniversary	44
DOST-Funded Project Research Upgrading and Performance Evaluation	48
SCIENTIFIC LINKAGES FUNCTION	51
Attendance at International Conferences	52
International Statements supported by NAST PHL	56
Gender and Development (GAD)	58
NAST Library	59
Outstanding Young Scientists, Inc.	60
PHILIPPINE SCIENCE HERITAGE CENTER	61
THE MEMBERS OF THE ACADEMY	64
NAST Divisions	65
Accomplishments of Academicians and National Scientists	73
STATEMENT OF FINANCIAL POSITION	100
NAST EXECUTIVE COUNCIL (2012-2015)	101
NAST SECRETARIAT	102

MESSAGE *from the* PRESIDENT

It is an honor to present the accomplishments of the National Academy of Science and Technology (NAST), Philippines this Annual Report for CY 2015.

The Academy welcomed five (5) distinguished scientists in its roster. Dr. Estrella F. Alabsatro (Chemical Engineering), Dr. Ceferino P. Maala (Veterinary Medicine), Dr. Jurgenne H. Primavera (Marine Science), Dr. Fortunato B. Sevilla III (Instrumentation and Analytical Science), and Dr. Edward H.M. Wang were invested as Academicians last July 9, 2015. Further, ninety six (96) scientists and researchers were recognized for their outstanding contributions to science and technology through the various awards given annually.

On a sad note, we were deeply saddened by the passing of National Scientist Benito S. Vergara.

The Academy conducted policy fora, conferences, focus group discussions and consultative meetings aimed at heightening the awareness, understanding and appreciation of the public on relevant and timely concerns on issues like biotechnology and biosafety, genetic engineering, infectious diseases, universal health care, coastal and inland fisheries and management, innovation, rare diseases, climate change energy, and non-communicable diseases,

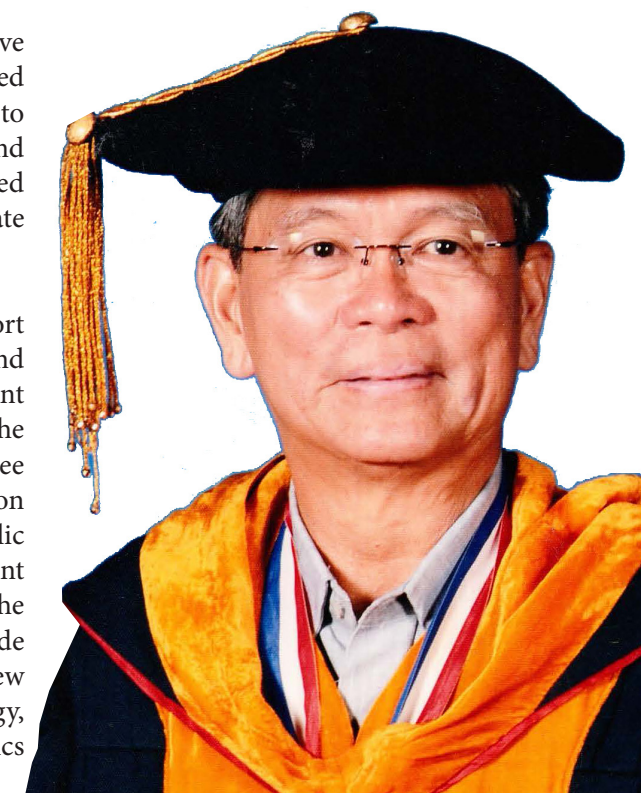
among others. From the active participation of concerned stakeholders, NAST was able to formulate recommendations and resolutions which were transmitted to concerned agencies for appropriate action.


With the generous support of the Department of Science and Technology and the Department of Budget and Management, the Academy was able to start three projects under the Special Studies on Science Policies. These were (a) Public Investment in S&T; (b) Assessment of the Regulatory Laboratories in the Philippines and their Role in Trade Facilitation; and (c) Initial Review of the K to 12 Science, Technology, Engineering and Mathematics (STEM) Curriculum.

The Health and Sciences Division organized this year's Annual Scientific Meeting with the theme "The Challenges of Non-Communicable Diseases (NCDs): Responding through Multisectoral Action." The ASM focused on the control and preventions of NCDs and the roles of the different disciplines, sectors and society in its prevention.

The year-long celebrations for 40th NAST Anniversary started on December 16, 2015 with the Special Lecture of DOST Secretary Mario G. Montejo on Science Innovation Ecosystem and the launching of the NAST 40th Anniversary Photo Exhibits and Logo at the Manila Hotel and will culminate to a grand anniversary celebration on December 17, 2016.

The succeeding pages of this annual report document the details of the Academy's activities and accomplishments. We look forward to the coming years in pursuit of excellence.




ACADEMICIAN WILLIAM G. PADOLINA
President

Executive Summary

The Academy continues its primary mandate of recognizing and giving awards to Filipino scientists and scientific and technological achievements aimed at advancing the state of Philippine science and technology. In 2015, five (5) distinguished scientists were elected to the Academy. These were: Dr. Estrella F. Alabastro (Chemical Engineering), Dr. Ceferino P. Maala (Veterinary Medicine), Dr. Jurgenne H. Primavera (Marine Science), Dr. Fortunato B. Sevilla III (Instrumentation and Analytical Science) and Dr. Edward H.M. Wang (Orthopaedics).

Exemplary young scientists and researchers were also recognized for their significant contributions to Philippine science and technology through the Outstanding Young Scientist Awards, TWAS Award for Young Scientists in the Philippines, NAST Talent Search for Young Scientist and the NAST Environmental Science Award. As the highest award giving body in science and technology, the Academy was tasked to handle the DOST Institutional Awards such as the annual NSTW Award and the Magsaysay Future Engineers and Technologists Competition. Further, one researcher in a government research institute was conferred with the scientist rank while three were upgraded from Scientist I to Scientist II through the Scientific Career System.

The whole science community mourned the passing of National Scientist Benito S. Vergara on 24 October 2015. NS Vergara was a renowned plant physiologist and recognized for his scientific achievements on the physiology of rice.

The Academy continues to actively fulfil its advisory function through activities focused on increasing the public awareness, understanding, and appreciation of the vital role of science and technology in national development through the conduct of roundtable discussions, fora, and consultative meetings on relevant and timely topics like biotechnology and biosafety, genetic engineering, infectious diseases, universal health care, coastal and inland fisheries, among others.

More than 700 scientists, researchers and media from all over the country attended the 37th Annual Scientific Meeting (ASM) held on 08–09 July 2015 at the Manila Hotel. The Health Sciences Division spearheaded the ASM and the theme was The Challenges of Non-Communicable Diseases (NCDs): Responding through Multisectoral Action. The two-day meeting aimed to extensively discuss the control and prevention of NCDs, share new conceptual framework in the development of NCDs, identify the major role of the

various sciences, civil society and other sectors in the prevention of NCDs.

Under the Scientific Linkages Function, the Academy strengthened its partnership with its international network by sending seven Academicians to attend and participate in various international conferences and fora. Several Academy members also served as board members of international organizations.

As the Philippine Science Heritage Center continues to evolve into a modern science center, five new interactive exhibits were launched last 27 July. These were the National Scientists Browser, Be a Biologist, Who's Who In Philippine Science, Play DNA, and Cutting Edge Research in Biotechnology in the Philippines. Present during the inauguration were NAST President Acd. William G. Padolina, DOST Assistant Secretary Oswaldo C. Santos, and other NAST Academicians and DOST Officials.

The achievements and accomplishments of the Academy and its individual Academy members would not be possible without the unstinting support and enduring trust of the scientific community. We are pleased to present these accomplishments as part of our commitment in achieving our vision of “a progressive Philippines anchored on science”.



THE ACADEMY

The National Academy of Science and Technology, Philippines (NAST PHL) is the country's highest advisory body to the government and the science community on matters related to science and technology. It also has the mandate to recognize outstanding achievements in science and technology made by Filipino scientists in all fields of science.

At present, NAST PHL has 66 members called Academicians, 15 of whom were conferred with the rank and title of National Scientist by the President of the Republic of the Philippines.

VISION, MISSION, and MANDATE

Its VISION for the COUNTRY

A PROGRESSIVE PHILIPPINES ANCHORED ON SCIENCE

Its VISION for NAST

NAST, as an academy of recognized experts, serves as principal adviser to the nation on science, technology, and innovation contributing to national development

Its MISSION

1. To recognize scientists for their exemplary science and technology achievements, and to identify and support emerging scientific talent;
2. To encourage Academy members to continue their own scholarly pursuits;
3. To provide independent advice on the utilization of science, technology, and innovation;
4. To promote a strong science culture in Philippine society; and
5. To link with national academies of science and technology in other countries.

Its MANDATE

1. To recognize outstanding achievements in science and technology as well as provide meaningful incentives to those engaged in scientific and technological researches (PD 1003-A);
2. To advise the President and the Cabinet on matters related to science and technology (EO 818);
3. To engage in projects and programs designed to recognize outstanding achievements in science and promote scientific productivity (EO 818);
4. To embark on programs traditionally expected of an academy of science (EO 818); and
5. To promote and preserve science and technology resources of the country through the Philippine Science Heritage Center (R.A. 9107) which shall serve as the main repository of the country's contributions, achievements, and accomplishments in science and technology

RECOGNITION *Function*

The Academy recognizes and provides incentives to Filipino scientists for outstanding achievements in scientific research and development. NAST PHL, through its Recognition function, has contributed significantly in promoting and fostering excellence in science and technology research in the country.



NATIONAL SCIENTIST RANK AND TITLE

The conferment of the Order of National Scientist by the President of the Republic of the Philippines is the highest honor given to a Filipino man or woman of science. Nominees should receive 60 percent of the total votes of the full membership of the Academy before being recommended to the President of the country for the honor. The award was created pursuant to Presidential Decree No. 1003-A on December 16, 1976. Since 1978, 41 Filipinos, 15 of whom are living, have been conferred as National Scientist.

MEMBERSHIP TO THE ACADEMY

Academicians and Corresponding Members

Membership to the Academy is by peer recognition and carries with it the title of "Academician." Elected as Academicians are resident Filipino scientists who have made exemplary contributions to science and technology and have advanced its cause in the Philippines.

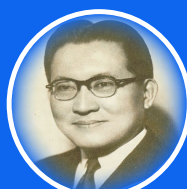
Corresponding membership, on the other hand, is conferred on non-resident Filipino scientists who have made exemplary contributions to the advancement of science and technology and must have continuing connections and contributions to Philippine science. They should regularly come to the Philippines to practice their field of expertise. Filipino citizenship and residency are waived as long as the three qualifications are met.

Honorary Membership

To recognize exceptional outstanding contributions to science and technology, the Academy established the Honorary Membership which may be conferred on recipients of internationally recognized prestigious scientific awards such as Nobel Prize, the Food Prize and the like, whose researches have contributed to the development of the Philippines and who come to the country to deliver a lecture for the Academy.



NATIONAL SCIENTISTS (1978-2015)



SALCEDO, Juan Jr. S.
Nutrition and Public
Health (1978)



SANTOS, Alfredo C.
Physical Chemistry
(1978)



ZARA, Gregorio Y.
Engineering and
Inventions (1978)



DEL MUNDO, Fe V.
Pediatrics
(1980)



QUISUMBING, Eduardo A.
Plant Taxonomy, Systematics
and Morphology (1980)



DE OCAMPO, Geminiano T.
Ophthalmology
(1982)



DEL ROSARIO, Casimiro
Physics Astronomy and
Metrology (1982)



VELASQUEZ, Gregorio T.
Phycology
(1982)



FRONDA, Francisco M.
Animal Husbandry
(1983)



SANTOS, Francisco O.
Human Nutrition and
Agricultural Chemistry (1983)



VELASQUEZ, Carmen C.
Parasitology
(1983)



AGONCILLO, Teodoro A.
Philippine History
(1985)



ALZONA, Encarnacion
Philippine History
(1985)



LARA, Hilario D.G.
Public Health
(1985)



BANZON, Julian A.
Biophysical Chemistry
(1986)



UMALI, Dioscoro L.
Genetics and Plant
Breeding (1986)



OLIVEROS-BELARDO, Luz
Pharmaceutical Chemistry
(1987)



ENCARNACION, Jose Jr.
Economics
(1987)



LAGMAY, Alfredo V.
Experimental
Psychology (1988)



CAMPOS, Paulo C.
Nuclear Medicine
(1989)



ESCURO, Pedro B.
Genetics and Plant
Breeding (1994)



LIM-SYLIANCO, Clara Y.
Biochemistry and Organic
Chemistry (1994)



VELASCO, Jose R.
Plant Physiology
(1998)



RAMIREZ, Dolores A.
Biochemical Genetics
(1998)



CASTILLO, Gelia T.
Rural Sociology
(1999)



JULIANO, Bienvenido O.
Organic Chemistry
(2000)



BALTAZAR, Clare R.
Systematic Entomology
(2001)



VERGARA, Benito S.
Plant Physiology
(2001)



CORPUZ, Onofre D.
Political Economics and
Government (2004)



LANTICAN, Ricardo M.
Plant Breeding
(2005)



CRUZ, Lourdes J.
Biochemistry
(2006)



TOPACIO, Teodulo Jr. M.
Veterinary Medicine
(2009)



CONCEPCION, Mercedes B.
Demography
(2010)



DOMINGO, Ernesto O.
Internal Medicine/
Gastroenterology (2010)



SANTOS-OCAMPO, Perla D.
Pediatrics
(2010)



FABELLA, Raul V.
Economics
(2011)



NEBRES, Bienvenido F., SJ
Mathematics
(2011)



ALCALA, Angel C.
Biological Sciences,
Humanities [h.c.]
(2015)



BARBA, Ramon C.
Horticulture
(2015)



GOMEZ, Edgardo D.
Marine Biology
(2015)



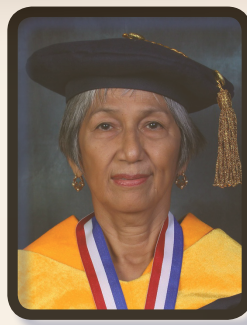
TRONO, Gavino Jr. C.
Marine Botany, Seaweed Bio-
diversity, Taxonomy, Ecology
and Culture (2015)

ELECTED ACADEMICIAN FOR 2015



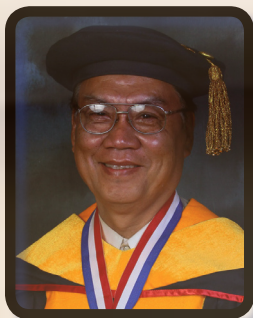
**ESTRELLA F.
ALABASTRO, Ph.D.**
(Chemical Engineering)

In recognition of her significant contributions as scientist, mentor, and science administrator. Dr. Alabastro pioneered in research on the thermal processing of Philippine food products to render them safe for consumption. These studies established the time-temperature protocols of the heat processing of common Filipino foods based on resistance to heat of target microorganisms. Her other studies delved on the extension of the shelf life of Philippine food delicacies and the use of irradiation as a quarantine treatment and a means to extend the shelf life of fruits such as mango. As educator, she was responsible for the institution of the Food Science Doctoral Program at the University of the Philippines Diliman and mentored many undergraduate and graduate students. As science administrator, she championed the role of science and engineering in our country's development. She served as project director of the Engineering and Science Education Project (ESEP) which benefited many science and engineering schools. As secretary of the Department of Science and Technology (DOST), she instituted and supported programs that had high impact on the lives of farmers and fisherfolk. Under her leadership, the DOST research institutes developed S&T-based solutions to problems frequently encountered by small and medium enterprises and set into motion measures to ensure that technologies developed by DOST agencies and academic institutions would reach the intended beneficiaries.



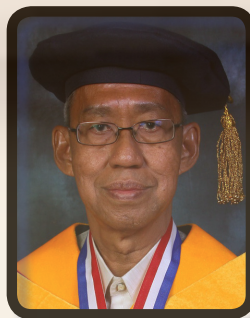
**JURGENNE H.
PRIMAVERA, Ph.D.**
(Marine Science)

In recognition of her significant and pioneering research contributions to the aquaculture of marine shrimp, the science-based utilization and conservation of mangroves, and to studies on the critically important beach forest ecosystem. Her research established conditions for induced maturation and broodstock development of sugpo, *Penaeus monogon*, and other penaeid shrimp that have led to increased farmed shrimp production. Dr. Primavera is an internationally-recognized expert on mangroves. Her extensive studies on mangrove—as nurseries for penaeid shrimp, the integration of brackishwater pond culture and mangrove for aquaculture, and the science-based rehabilitation of mangroves represent a holistic approach to the sustainable use of mangroves. Dr. Primavera has also significantly contributed to the identification of beach forests, including the inventory of and germination trials of various species suitable for the rehabilitation of beach forests. As a scientist of the Southeast Asian Fisheries and Development Center, she mentored many students, staff and trainees from the Philippines and other parts of the world.



**CEFERINO P.
MAALA, Ph.D.**
(Veterinary Medicine)

For his outstanding contributions as a scientist and professor, to the fields of veterinary anatomy and physiology of livestock species, most especially the anatomy of the carabao. He devised alternative methods of animal identification, an important technology for the control of emerging animal diseases. His researches at the College of Veterinary Medicine, University of the Philippines Los Baños have contributed significantly to the development of strategies for the improvement of health, production and reproduction of important livestock species. His numerous publications have been useful references for veterinary anatomy and in the identification and conservation of livestock and wild animal species. Dr. Maala mentored more than 100 undergraduate and graduate students, taught several courses in veterinary medicine and has authored and co-authored eight books and laboratory manuals. He also served as editor-in-chief of the Philippine Journal of Veterinary and Animal Sciences and as co-editor and reviewer of the Philippine Journal of Veterinary Medicine.

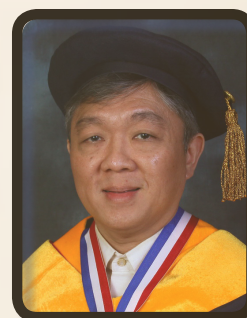


**FORTUNATO B.
SEVILLA III, Ph.D.**
*(Instrumentation and
Analytical Chemistry)*

In recognition of his pioneering and outstanding work on chemical sensors and biosensors in the Philippines. His research group at the University of Santo Tomas was the first in the country to fabricate chemical sensors based on optical fibers, to synthesize molecularly imprinted polymers for use in piezoelectric chemical sensors and to develop electric nose systems, which have applications in monitoring the quality of economically important products such as virgin coconut oil, civet coffee and mango. His work in the field of low-cost instrumentation and microscale chemistry has contributed to the improvement of chemistry education in the Philippines and in different parts of the world and has been recognized by the International Union of Pure and Applied Chemistry. It has enabled chemistry teachers to teach chemistry laboratory courses more effectively through the use of locally available low-cost materials and resources.

EDWARD H.M. WANG, M.D.
(Orthopaedics)

In recognition of his significant contributions as a researcher, clinician, mentor, and scientist, specifically, for his extensive research in musculoskeletal tumor in the Philippines and for establishing that life-saving treatment and limb saving are possible in a state-subsidized government hospital for bone and tissue cancers of the limbs. His excellent collection of data of about 3000 cases on the musculoskeletal tumor patients at the Philippine General Hospital of the University of the Philippines Manila resulted in better patient service and allowed for further study and understanding of these conditions. This has served as the backbone of many research studies in terms of demographics, treatment results, and survival rates. He spearheaded the establishment of a multidisciplinary unit known as the UP-MuST Unit (University of the Philippines Musculoskeletal Tumor Unit) for optimum medical management, including medical and pediatric oncology, pathology, radiation oncology which serves as model for others to emulate locally and internationally. Dr. Wang and his team have directed their scientific work to optimizing treatment for the Filipino patient, addressing different concerns and situations unique to the Philippines.

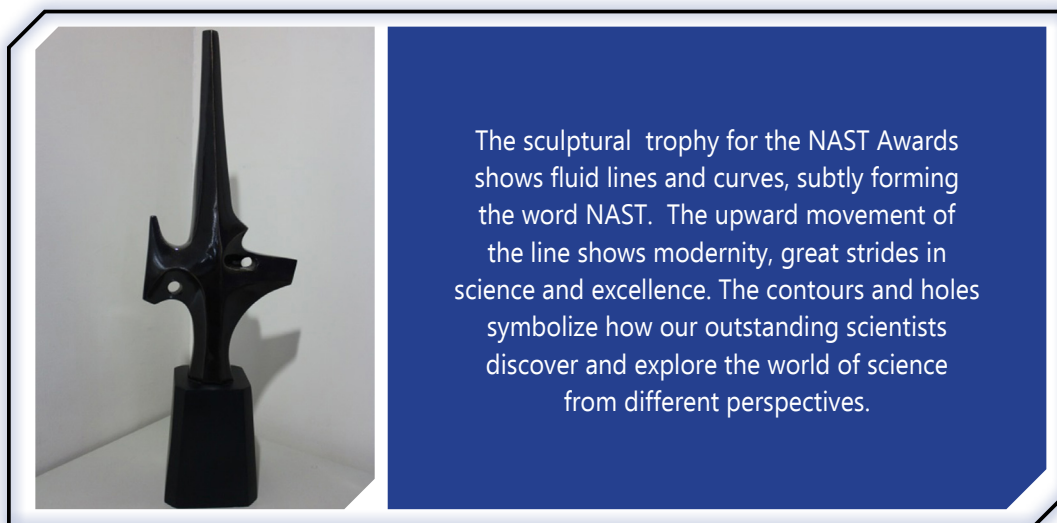


Major Recognition Awards

OUTSTANDING YOUNG SCIENTIST (OYS) AWARDS

The Outstanding Young Scientist (OYS) award is given to young Filipino scientists (must not be 41 years old within January to December in the year of the award) who have made significant contributions to science and technology.

For CY 2015, seven young Filipino scientists received the Outstanding Young Scientist (OYS) Awards.



From L-R: Academician Reynaldo B. Vea, DOST Undersecretary Amelia P. Guevara, National Scientist Mercedes B. Concepcion, Clarissa C. David, Enrico C. Paringit, Allan Patrick G. Macabeo, Rex Ferdinand M. Traifalgar, Joey D. Ocon, Dennis V. Umali, Aimee Lynn Barrion-Dupo, Academician William G. Padolina, and Dr. Kenneth Hartigan-Go.



DENNIS V. UMALI, Ph.D.
(Veterinary Science)

University of the Philippines Los Baños

In recognition of his outstanding researches on the molecular characterization of economically important poultry pathogens, especially the Newcastle Disease Virus (NDV). With his co-workers, the complete NDV genome was sequenced for the first time, NDV field surveillance in commercial poultry farms and in migratory water fowls was conducted and the basis of the formulation of effective preventive and control strategies of the disease was established. Dr. Umali's present research involves a national molecular epidemiological investigation of poultry and livestock diseases in the Philippines with the end in view of formulating their more efficient diagnosis, prevention, control and treatment.



REX FERDINAND M. TRAIFALGAR, Ph.D.
(Fisheries Science)

University of the Philippines Visayas

In recognition of his outstanding research contributions to the development of gas chromatography mass spectrometry detection method in detecting off-flavor compounds in milkfish, cultured water and bacteria from Laguna Lake; for spearheading the classification and identification of bacterial species that cause off-flavor in milkfish, which greatly benefitted the the vicinity of Laguna Lake; and for spearheading researches in the use of immunostimulants in shrimp aquaculture and juvenile mud crab to identify the optimum dosage that could enhance the immunological status and improve the overall biological performance of these species. His findings have served as basis for higher investigation of immunostimulants on the biology of cultured species in the global context.



AIMEE LYNN BARRION-DUPO, Ph.D.
(Entomology)

University of the Philippines Los Baños

In recognition of her outstanding researches in Lepidoptera and spiders and her important contributions to the taxonomy and ecology of rice black bugs from Philippine rice agro-ecosystems. In particular, her work on the Philippine Geometridae, the second largest and least-studied family of Lepidoptera, has provided basic taxonomic and distributional data which are important in studying their movement and future quarantine activities. Dr. Barrion-Dupo's publications have provided much needed basic information needed to develop and implement strategies for the conservation of the biodiversity of these species. She has also significantly contributed to the updating of the geometrid holdings of both the UPLB Museum of Natural History and the Philippine National Museum.



ENRICO C. PARINGIT
Dr. of Engineering

University of the Philippines Diliman

In recognition of his outstanding contributions in the areas of climate change and disaster risk management, particularly in spearheading the implementation of the Nationwide Disaster Risk Exposure and Assessment for Mitigation (DREAM) Program, the biggest research project of the UP System, using cutting-edge technologies such as the Light Detection and Ranging (LIDAR) and Synthetics Aperture Radar (SAR), that has produced up-to-date, detailed, and high resolution elevation maps of 18 critical river basins in the country and later those of 250 river basins. The data and knowledge derived by Dr. Paringit's team are important planning tools in facing disasters like floods, landslides, and other natural hazards.



JOEY D. OCON, M.Sc.
(Chemical Engineering)
University of the Philippines Diliman

In recognition of his scientific and technological contributions in the field of electrochemistry, which are important in enabling the wider utilization of renewable but intermittent forms of energy and more efficient conversion of fuels to electricity via fuel cells; and of his role in the establishment of the Laboratory of Electrochemical Engineering at the College of Engineering, University of the Philippines, which trains young researchers and locally develops electrochemical energy storage and conversion systems as well as other advanced green technologies envisioned to reduce the country's dependence on petroleum oil.



ALLAN PATRICK G. MACABEO,
Dr. Nat. Science
(Organic Chemistry)
University of Santo Tomas

In recognition of his important research contributions to the isolation, identification and structure determination of a wide range of secondary metabolites, many of which are biologically active, from indigenous medicinal plants. Further, his synthetic studies have supported both the structure elucidation and the significance of certain functional groups within those biologically active molecules. His studies have helped validate the potential of endemic Philippine medicinal plants as source of phytochemicals to fight fast- and slow-growing Mycobacterium tuberculosis and other diseases and the chemotaxonomic significance of certain natural product structures from Philippine Annonaceae plants to systematically study the chemical variation between plant taxa, and the use of green synthetic methodologies to access a variety of medicinally important compounds and stereoisomerically pure natural product manifolds.



CLARISSA C. DAVID, Ph.D.
(Communication)
University of the Philippines Diliman

In recognition of her outstanding research work on framing of political issues in the news and other forms of public conversations, which has contributed to methods of frame analysis in communication research. With collaborators, new methods of automated frame analysis were designed in order to deal with large amounts of textual data while under close guidance of a theoretical framework that is largely qualitative. This has been successfully applied in studying the population management debate with media frames of the issue. Her studies clearly focus on the nuances of media and communication systems and on the dynamics of politics and governance. The academic relevance of her various researches which have been published in refereed journals, local and international, may be gleaned from the numerous citations she has earned as a scholar.

TWAS PRIZE FOR YOUNG SCIENTIST IN THE PHILIPPINES

The award is given to an outstanding young Filipino scientist by the Academy and The Third World Academy of Sciences (TWAS) for the advancement of science in developing countries. The awardee must be less than 40 years old within January to December in the year of the awarding. For 2015, the award is given to an outstanding individual in the field of Chemistry.



ALLAN PATRICK G. MACABEO,
Dr. Nat. Science
(Organic Chemistry)
 University of Santo Tomas

In recognition of his important research on the sustainable use of biologically active compounds from Philippine medicinal plants, and synthetic manipulation of sugar biomass by-products as tools to increase the library of medicinal agents important for drug discovery studies. His research has resulted in the isolation and identification of a wide range of natural products from indigenous Philippine medicinal plants as inspiration for developing future anti-infective, cytotoxic, anti-neurodegenerative and anti-hyperpigmenting drug platforms. Through his synthetic studies, he has supported both the structure elucidation efforts and has shown the significance of certain functional groups within biologically active molecules. These efforts are very important in establishing and validating the vast potential of Philippine resources for medicinal purposes. His works have also promoted the importance of studying the chemotaxonomic significance of certain functional groups within biologically active molecules. These efforts are very important in establishing and validating the vast potential of Philippine resources for medicinal purposes. His works have also promoted the importance of studying the chemotaxonomic significance of certain natural product structures from Philippine Annonaceae plants to systematically study the chemical variation between plant taxa; the use of furan-derived donor-acceptor cyclopropanes from sugar-biomass to develop asymmetric synthetic approaches en route complex natural products structures; and the use of green synthetic methods to prepare a variety of medicinally important compounds and stereoisomerically pure natural products manifold.

NAST ENVIRONMENTAL SCIENCE AWARD

The NAST Environmental Science Award recognizes outstanding scientific and technological research works that contribute to environmental protection and conservation.

This year, the board of judges, chaired by National Scientist Angel C. Alcala, has declared two winners:

ARSENIO B. ELLA, M.S. (Forestry)

Forest Products Research Development Institute (FPRDI),
Department of Science and Technology (DOST)

In recognition of his exemplary contributions in the field of forest products utilization research, particularly for his important works in the generation of technical information and technologies on exudates-producing plants that led to the formulation of standards and guidelines towards improved methods of harvesting resins, such as the Manila copal (Almaciga resin), Manila elemi (Canarium resin), balau (Apitong resin), oleoresin (Benguet pine resin), and oil of palosapis (Anisoptera resin), which have contributed to the conservation of species that produce resins and prolonged life span of trees, sustaining and maximizing resin production. His research generated scientific knowledge and technical skills in non-wood forest products utilization which contributed to poverty reduction and livelihood enhancement among the more marginalized sectors of our society, especially the indigenous communities.

SEVERINO G. SALMO, Ph.D. (Biological Science)

Ateneo de Manila University

For his significant contribution in the documentation and evaluation of the ecological functionality of mangroves; for his studies on the impacts of mangrove restoration programs in terms of the recovery of forest cover and its contribution in the enhancement of macrofaunal communities like mollusk and fish assemblages. His study provides mangrove managers with an understanding of how long and to what extent, planted mangroves ecologically perform at certain ages, and how much is being lost or missed when natural mangrove forests are converted into other uses. For developing a plant ecological model that assessed how mangroves will be affected by accelerated sea level rise and provide insights on the vulnerability of communities living along coastal areas. For his study that shows that the loss of natural mangroves and replacing it with planted mangroves reduces resiliency against typhoons and hence may result to more severe damages if not properly managed.



From L-R:
DOST Undersecretary Amelia P. Guevara, National Scientist Mercedes B. Concepcion, Arsenio B. Ella, Severino G. Salmo, and Academician William G. Padolina.

NAST TALENT SEARCH FOR YOUNG SCIENTISTS

The NAST Talent Search for Young Scientists is a project of the Academy that encourages young people (must not be more than 35 years old within January to December in the year of the award) to pursue a career in science.



From L-R:

Pierangeli G. Vital, Rose Ann G. Franco,
Charlotte Kendra D.Z. Gotangco, Drandreb
Earl O. Juanico, and Romar B. dela Cruz.

FIRST PRIZE

DRANDREB EARL O. JUANICO

Ph.D. (Physics)

Technological Institute of the Philippines

In recognition of his outstanding scientific and technological research entitled "Epidemic cycle induced by intervention in a susceptibility-structured population"

SECOND PRIZE

CHARLOTTE KENDRA D.Z. GOTANGCO, Ph.D.

(Earth and Atmospheric Sciences)

Ateneo de Manila University

In recognition of her outstanding scientific and technological research entitled: "A sensitivity analysis of surface biophysical, carbon, and climate impacts of tropical deforestation rates in CCSM4-CNDV"

THIRD PRIZE

ROMAR B. DELA CRUZ, Ph.D.

(Mathematical Science)

University of the Philippines Diliman

In recognition of his outstanding scientific and technological research entitled: "Cheating-immune secret schemes from codes and cumulative arrays"

SPECIAL CITATION

PIERANGELI G. VITAL

Ph.D. (Biology)

University of the Philippines Diliman

In recognition of her outstanding scientific and technological research entitled: "Microbiological quality of fresh produce from open air markets and supermarkets in the Philippines"

SPECIAL CITATION

ROSE ANN G. FRANCO, M.S.

(Medical Science)

University of the Philippines Los Baños

In recognition of her outstanding scientific and technological research entitled: "Utilization of polyvinylphosphonic acid (PVPA) and its effect on the material properties and biocompatibility of polyvinyl alcohol (PVA) electrospun membranes"

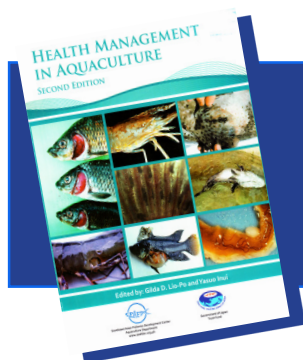
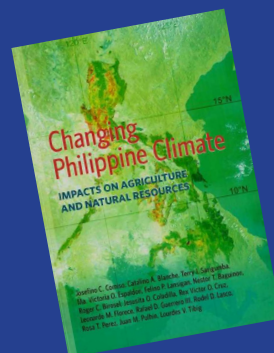
OUTSTANDING BOOK/MONOGRAPH AWARDS

These awards are given annually for outstanding books and/or monographs published in the Philippines by Filipino authors or co-authors within five years preceding the award.

For 2015, the winners are as follows:



■ **Changing Philippine Climate: Impacts on Agriculture and Natural Resources** (by Josefino C. Comiso, Catalino A. Blanche, Terry I. Sarigumba, Ma. Victoria O. Espaldon, Felino P. Lansigan, Nestor T. Baguion, Roger C. Birosel, Jesusita O. Coladilla, Rex Victor O. Cruz, Leonardo M. Florece, Rafael D. Guerrero III, Rodel D. Lasco, Rosa T. Perez, Juan M. Pulhin, Lourdes V. Tibig) The University of the Philippines Press, 2014



■ **Health Management in Aquaculture (Second Edition)** (by Gilda D. Lio-Po and Yasao Inui) ISBN 978-971-0487-56-1 Published by Southeast Asian Fisheries Development Center Aquaculture Department, 2010



■ **The RH Wars: Framing the Population and Reproductive Health Debate (IPC Culture and Development Series No. 10)** (by Clarissa C. David, Antonio G.M. La Viña, and Jenna Mae L. Atun) ISBN 978-971-861-064-0 Published by Institute of Philippine Culture, School of Social Sciences, Ateneo de Manila University, 2014



OUTSTANDING SCIENTIFIC PAPERS

The Outstanding Scientific Paper Award is given annually for papers published in Philippine scientific or technical journals within five years preceding the award.

The following are the winners for 2015:

- **Integrating bio-physical, social, financial and market factors for a sustainable upland agricultural development in Casiguran, Aurora, Philippines** (by Walfredo R. Rola, Rodrigo B. Badayos, Pompe C. Sta. Cruz, Moises A. Dorado, Ronaldo O. Rogel, and Florentino R. Monsalud) ISSN 0115-463X *Philippine Journal of Crop Science* 37(3):40-54 2012
- **Soil chemical and physical properties with rice straw management during fallow period** (by Michelle B. Castillo, Cezar P. Mamaril, Erlinda S. Paterno, Pearl B. Sanchez, Rodrigo B. Badayos, and Pompe C. Sta. Cruz) ISSN 0115-463X *Philippine Journal of Crop Science* 37(1):15-26 2012
- **Utilization of loop-mediated isothermal amplification (LAMP) technology for detecting White Spot Syndrome Virus (WSSV) and *Vibrio* spp. in *Litopenaeus vannamei* in selected sites in the Philippines** (by Amalea Dulcene D. Nicolasora, Mary Beth B. Maningas, Benedict A. Maralit, Christopher Marlowe A. Caipang, Mudjekeewis D. Santos, and Adelaida Calpe) ISSN 2094-2818 *Philippine Science Letters* 7(2):309-316 2014
- **Molecular phylogeny of the genus *Bikkia* (Rubiaceae) including a new endemic Philippine inland forest species *Bikkia montoyae*** (by Grecebio Jonathan D. Alejandro, Lorenzo Angelo R. Santos, Hao Wei C. Hsu, Michelle Samantha S. Mejillano, Propa Joy R. Santor, and Victor B. Amoroso) ISSN 2094-2828 *Philippine Science Letters* 7(1):88-96 2014
- **Mathematical analysis of bistability in reduced models of apoptosis** (by Joseph Ray Clarence G. Damasco, Marian P. Roque, Ricardo C.H. Del Rosario) ISSN 2094-2818 *Philippine Science Letters* 6(2):138-146 2013
- **Physico-chemical and microbiological parameters in the deterioration of virgin coconut oil** (by Ian Ken D. Dimzon, Melodina F. Valde, Jaclyn Elizabeth R. Santos, Mark Joseph M. Garrovillas, Henson M. Dejarme, Jo Margarette W. Remollo, and Fabian M. Dayrit) ISSN 0031-7683 *Philippine Journal of Science* 140(1): 89-103 2011
- **Design, fabrication and performance evaluation of a photobioreactor for the cultivation of *Chlorella vulgaris* (Beijerinck)** (by Denise Ester O. Santiago, Rex B. Demafelis, Milagrosa Martinez-Goss, June Owen O. Nacorda, Nerissa K. Torreta, Butch G. Bataller, Mark Jason H. Redondo, Nickson L. Jao, Lisa Stephanie H. Dizon) ISSN 0115-463X *Philippine Journal of Crop Science* 38(2):21-29 2013
- **A molecular dynamics investigation of water migration in a lipid bilayer for microalgae drying** (by Robby Manrique, Aristotle Ubando, Al Rey Villagrancia, Jennifer Corpuz, Allan Abraham Padama, Melanie David, Nelson Arboleda Jr., Alvin Culaba, Hideaki Kasai) ISSN 2094-2818 *Philippine Science Letters* 7(1): 138-145 2014
- **Shocks to Philippine households: incidence, idiosyncrasy, and impact** (by Joseph J. Capuno, Aleli D. Kraft, Stella A. Quimbo, and Carlos Antonio R. Tan Jr.) ISSN 1655-1516 *The Philippine Review of Economics* L(2):1-27 2013
- **Productivity of rice farming in the Philippines: Patterns and sources** (by Flordeliza H. Bordey and Carl H. Nelson) ISSN 0115-463X *Philippine Journal of Crop Science* 37(3):10-22 2012

DOST INSTITUTIONAL AWARDS (NSTW Awards)

The National Science and Technology Week (NSTW) is the annual celebration of the Department of Science and Technology (DOST) that highlights the important contributions of science and technology to national development. During the NSTW, outstanding scientists and technologists are recognized. It also serves as a venue for scientists and researchers to interact with entrepreneurs and businessmen.

The awards were given during the opening ceremony of the NSTW celebration on July 24, 2015 at the SMX Convention Center, SM Mall of Asia Complex, Pasay City. The ceremony was led by DOST Secretary Mario G. Montejo with DILG Secretary Mar Roxas as the guest speaker.

The NSTW awards recognize individuals and institutions that have made significant accomplishments and contributions to the generation of knowledge and technologies, utilization of research results and promotion of S&T in the country. NAST PHL handles the awards in behalf of DOST.



Academician William G. Padolina, Dr. Windell L. Rivera, Dr. Marybeth B. Maningas, Academician Aura C. Matias, Secretary Mario G. Montejo, and Secretary Manuel Roxas

Outstanding Technology Commercialization Award Gregorio Y. Zara Medal

The Outstanding Commercialization Award is given in recognition of the efforts of technology generators and developers whose technologies have been commercialized. The award was named after National Scientist Gregorio Y. Zara, a renowned Filipino engineer and inventor. No winner was identified for 2015.



Dr. Gregorio Y. Zara was an educator, an inventor, and a scientist. He invented the Earth Induction Compass, Vapor Chamber and the television-telephone, among others. He was one of the pioneers of aeronautical engineering in the country, author of a number of science textbooks and an outstanding public servant.

Outstanding Research and Development Award (for basic research) Eduardo A. Quisumbing Medal

The award is given to individual or group who has made outstanding contributions through basic research. The award was named after National Scientist Eduardo A. Quisumbing, the Father of Philippine Orchidology, an outstanding botanist, administrator, conservationist, curator, science writer, and educator.



Dr. Eduardo A. Quisumbing was an outstanding botanist, orchidologist, administrator, conservationist, curator, science writer, and educator. He is recognized as the Father of Philippine Orchidology.

WINDELL L. RIVERA, Ph.D.

Institute of Biology

University of the Philippines Diliman (UPD)

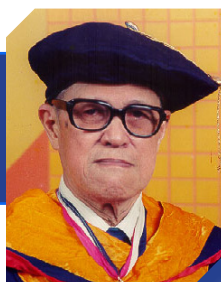
In recognition of his pioneering studies on "Biology, diagnosis and pathogenesis of trichomonads in the Philippines" with emphasis on Trichomonas vaginalis which infects human genitourinary tract and can thrive in vaginal discharges, urine and urethral infections causing the sexually transmitted infection, trichomoniasis. These studies contributed to the current understanding of the biology of these neglected yet very important microorganisms.



2015 Eduardo Quisumbing
Medal Awardee

Outstanding Research and Development Award (for applied research) Julian A. Banzon Medal

The award is given to individual or group who has made outstanding contributions through applied research. The award was named after National Scientist Julian A. Banzon, the grand man of chemistry.



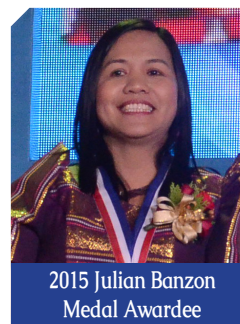
Dr. Julian A. Banzon was outstanding chemist. He concentrated his studies on Philippine coconut as a primary renewable source of chemicals and fuels. He devised novel processes that extracted residual coconut oil by chemical, rather than by physical process.

MARYBETH B. MANINGAS, Ph.D.

Department of Biological Sciences

University of Santo Tomas

In recognition of her outstanding research on the "Development of primers for loop-mediated isothermal amplification of Philippine white spot syndrome virus (WSSV) isolates" which specifically and efficiently detect the WSSV, one of the major viruses that devastated global shrimp aquaculture. The discovery of loop mediated isothermal amplification (LAMP) brought about opportunities for fast diagnosis of animal and human diseases. This study successfully developed alternative primers and defined optimum conditions for the LAMP detection of Philippine WSSV isolates.



2015 Julian Banzon
Medal Awardee

Outstanding Science Administrator Award Dioscoro L. Umali Medal

The Outstanding Science Administrator Award is given in recognition of S&T or R&D administrators who have made significant contributions to science and technology through effective management and implementation of plans and programs. The S&T or R&D administrator may come from the academe, private sector or government. This award was named after National Scientist Dioscoro L. Umali, the father of Philippine

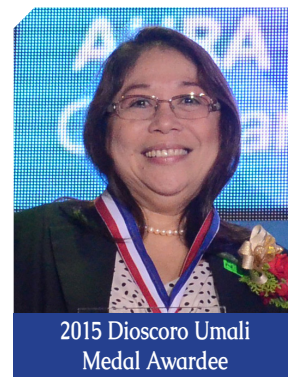


Dr. Dioscoro L. Umali was a scientist, educator, research organizer, development administrator, and science statesman who was best known for his plant breeding work that resulted in the breeding of improved varieties of food grains, legumes, fruits and ornamental plants. He was a strong advocate of people's participation in planning and decision-making and played a catalytic role in providing deep insights and inspiring fellow scientists to set goals and share experiences about the social changes and transformation in a society concerned with developing the full potential of man.

AURA C. MATIAS, Ph.D. Dean, College of Engineering University of the Philippines Diliman

In recognition of her outstanding leadership as the Dean of the College of Engineering, University of the Philippines Diliman and concurrent Executive Director of the University of the Philippines National Engineering Center (UPNEC). For her effort in increasing the research outputs of the faculty members of the College through the conferment of professorial chair awards and teaching research grants and producing high-impact researches. For engaging its students in research work early on by supporting activities that are geared towards this goal such as the conduct of the Undergraduate Project Competition and the Engineering Innovation Congress at the College and in fielding in of students to local and international competitions. Likewise, Dr. Matias has nurtured and given opportunities for the college personnel to grow and be productive through the conduct of yearly seminars and strategic planning workshops and has instituted the yearly recognition of outstanding employees.

Dr. Matias has initiated steps towards professionalizing the UPNEC by improving infrastructure, defining the UPNEC framework, implementing work systems, setting targets and proactively addressing customer satisfaction and marketing. It is during her leadership that the refereed publication entitled Philippine Engineering Journal has been updated and published on time which increased subscribers from local and international universities. UPNEC has partnered with different government agencies and private organizations and has been identified by the World Bank-AusAid to house the Philippine Learning Center on Environment and Social Responsibility. Through her efforts, the UPNEC was awarded the Philippine Quality Challenge Award in 2012 and the Philippine Quality Challenge Seal of Improvement in 2014 by the Department of Trade and Industry.



2015 Dioscoro Umali
Medal Awardee

Magsaysay Future Engineers/Technologists Award

The Magsaysay Future Engineers/Technologists Award is an annual award given by NAST PHL and DOST, which aims to recognize outstanding research outputs on engineering and technology at the collegiate level and encourage young Filipino students to pursue a career in science.



Former Senator Ramon B. Magsaysay Jr. presented the award with Acd. William G. Padolina. The board of judges was composed of Acd. Angel L. Lazaro III, Acd. Estrella F. Alabastro, Acd. William T. Torres, and Dr. Allan N. Soriano, OYS 2010.

1st Prize Winner

RYAN KARLO A. MADAMBA
University of the Philippines Los Baños

In recognition of his outstanding scientific and technological research entitled: "A combined mixture design approach for the optimization of enzyme-mediated extraction of carotenoids from luyang dilaw (Curcuma longa L.) meal for use as food colorant"

2nd Prize Winner

IAN LORENZO E. GONZAGA
University of the Philippines Los Baños

In recognition of his outstanding scientific and technological research entitled: "Electrochemical recovery of nickel from leaf ash of the nickel-hyperaccumulating plant Rinorea bengalensis"

3rd Prize Winner

DWAYNE MARK Y. ACOSTA
De La Salle University

In recognition of his outstanding scientific and technological research entitled: "The propagation behavior of pile-driving-induced vibration done on soil at varying distances and its effects on existing structures"

SPECIAL CITATIONS

JAN TRISTAN M. ACENAS

University of the Philippines Los Baños

In recognition of his outstanding scientific and technological research entitled: "Optimization and scale-up studies for the fermentative production of phosphate solubilizing bacteria in stirred tank bioreactor using molasses and whey as medium components"

JHUN MARC S. SALVADOR

University of the Philippines Los Baños

In recognition of his outstanding scientific and technological research entitled: "Optimization and scale-up studies for the production of biosurfactant by Saccharomyces cerevisiae 2031 in a stirred tank bioreactor using molasses and coco paring meal as substrate"

BENEFITS OF ACADEMICIANS AND NATIONAL SCIENTISTS

Aside from the recognition awards, the Academy also provides incentives, benefits, and privileges to Academicians and National Scientists. These are research fellowship grants, travel and publication assistance.

Table 1. NAST members with Research Fellowship Grants

RESEARCH FELLOW	DURATION	TITLE OF RESEARCH FELLOWSHIP
Acad. Filemon A. Uriarte Jr.	January - May 2015	Book Writing: The University in a Knowledge Economy
NS Ernesto O. Domingo	January - September 2015	Health System Shapers
NS Gavino C. Trono	September -December 2015	The Biodiversity of the Seaweed Flora Resources along the Pacific Seaboard of the Philippines
Acad. Remigio M. Olveda	October - December 2015	Schistosomiasis in the Philippines: Discovery, pathogenesis and control
Acad. Rafael D. Guerrero III	October - December 2015	Strategies in Coping with Climate Variability for Philippine Aquaculture
Acad. Christopher C. Bernido	October - December 2015	Stochastic Processes with Memory for Big Data Analysis
Acad. Asuncion K. Raymundo	October -December 2015	Meeting the Microbiology Education Needs of the Manufacturing Industry
Acad. Ernesto J. Del Rosario	December 2015	Development of Digital Photometric Methods for Quantifying Rice Grain Quality Parameters
Acad. Carmencita D. Padilla	December 2015	Policy Development on Folic Acid Supplementation and Fortification in the Philippines

Table 2. Publication Assistance

NAST MEMBER	TITLE OF PUBLICATION
NS Gelia T. Castillo	Rice Self-Sufficiency Under the Lens of Provincial Analysis: A New Way of Looking at the National Rice Security
Acad. Antonio Miguel L. Dans	Painless Evidence Based Medicine

In Memoriam

National Scientist Benito S. Vergara

23 June 1934 – 24 October 2015



The country's renowned plant physiologist, National Scientist Benito S. Vergara passed away on October 24, 2015 at the age of 81. The National Academy of Science and Technology, Philippines (NAST, PHL), led the scientific community in mourning the demise of NS Vergara. He was recognized for his scientific and technological achievements in the physiology of rice — its flowering response to photoperiod, deepwater physiology, flood tolerance, cold tolerance, ratooning, growth and development, rice herbage, UV-B and yield potential, from his researches conducted at the International Rice Research Institute (IRRI). His seminal work on the physiology of deepwater rice and flood tolerance in the rice plant resulted in the development of screening procedures for flood tolerance, which have been adopted by national breeding programs leading to the identification of parent materials with excellent flood tolerance.

NS Vergara's extensive work on the flowering response of rice to photoperiod, was applied to upgrade rice varieties. He helped develop different screening techniques for cold tolerance at different stages of the rice life cycle. Through such methods, cold tolerant rice cultivars were identified and were used as parent materials in national breeding programs, an important contribution to Philippine agriculture. He also developed and streamlined a breeding methodology known as the "Rapid Generation Advance" to improve varieties of rice planted in cold areas. The technique is now used by many national breeding programs. He conceptualized a model for an even higher yielding rice — the so-called "super rice" based on a new ideotype with the correct panicle morphology, grain development and low tillering habit as key components. He and his group pioneered research on the possible effects of ozone depletion in the atmosphere on the growth, development and yield of rice.

He popularized the scientific basis of modern way of growing rice, which was circulated around the world.

During his last years at IRRI, Dr. Vergara conceptualized, designed and pushed for the establishment of the Riceworld Museum and Learning Center which was inaugurated in 1994. He was also instrumental in designing and putting together the NAST Philippine Science Heritage Center (PSHC) or Salinlahi, which focuses on the scientific and technological achievements of Filipino scientists.

In addition to his more than 100 scientific publications, NS Vergara wrote a book "A Farmer's Primer on Growing Rice", which has more than 50 editions and 50 translations. The book discusses the essence of scientific knowledge on rice production that ordinary farmers could understand. As Visiting Professor at UP Los Baños, he mentored 17 MS and 14 PhD students in

agronomy and botany as well as trained many scholars from rice growing countries all over the world.

NS Vergara received numerous awards, among which were the BIOTA Achievement Award and the Pro Patria Award (1980), Fellow of the American Society of Agronomy (1986), and Honorary Scientist from the Republic of Korea (1998).

For his significant contributions in plant physiology studies in the country, he was elected member by the National Academy of Science and Technology (NAST) in 1987 and was conferred the rank and title of National Scientist in 2001 by the Philippine president.

He obtained his BS in Botany from the University of the Philippines (1955), MS in Botany from the University of Hawaii (1959), and PhD in Plant Physiology from the University of Chicago in 1960.

At IRRI, Dr. Vergara served as Plant Physiologist and later as Director for Administration until he retired in 1996. Upon retirement, he shifted his work to ornamental plants and fruit trees and the expansion of the Salinlahi.

Necrological service in honor of National Scientist Benito S. Vergara was held at the Department of Science and Technology front lobby on October 29, 2015.



SCIENTIFIC CAREER SYSTEM



The year 2015 witnessed the progression of important initiatives and efforts of the Scientific Career Council started in 2014. These undertakings aim to promote a more responsive and efficient reward and recognition system for its member scientists and would-be scientists in the overall efforts to improve productivity in research. In 2015, the SCS received several applications for admission and upgrading from the Department of Science and Technology (DOST), Department of Agriculture (DA) and Department of Health (DOH). This year was also characterized by the continuous active promotion of the Scientific Career System (SCS) for the System to be implemented in various government agencies with potential researchers for conferment of scientist rank.

Admission and Upgrading in Scientist Rank

In 2015, the Scientific Career System received a total of nine (9) applications for admission — seven of which were from the Industrial Technology Development Institute (ITDI) and the Philippine Nuclear Research Institute (PNRI) of DOST. Another application for admission and an application for upgrading from Scientist II to Scientist III were also received from DA-Philippine Carabao Center (PCC). The SCS also received an application for admission from DOH-Research Institute for Tropical Medicine (RITM).

Oath Taking of Newly Conferred Career Scientists

One newly conferred and three promoted SCS scientists were sworn in by National Academy of Science and Technology (NAST) President and SCC Member Academician William G. Padolina during a simple ceremony held on December 9, 2015 at the Acacia Hotel Manila in Alabang, Muntinlupa City. The newly conferred scientist, Dr. Marilla G. Lucero, is from Research Institute for Tropical Medicine (RITM) of the Department of Health (DOH), and the three upgraded scientists are Dr. Claro N. Mingala, Dr. Mudjekeewies D. Santos and Dr. Dionisio G. Alvindia, from Philippine Carabao Center (PCC), National Fisheries Research and Development Institute (NFRDI) of the Bureau of Fisheries and Aquatic Resources (BFAR), and Philippine Center for Postharvest Development and Mechanization (PhilMech), of the Department of Agriculture, respectively.



From L-R: Dr. Marilla G. Lucero, Scientist I and Dr. Claro N. Mingala, Scientist II taking their oath before Acd. William G. Padolina, NAST President and ex-officio member of the Scientific Career Council.

CSC and SCC Chairperson Alicia dela Rosa-Bala, through her representative Human Resource Policies and Standards Office Director Azucena P. Esleta, expressed her regard for the scientists group as the brightest hope of the country. She emphasized that the group has a low need for developmental and disciplinary actions. She recognized the role of the SCS in honing and nurturing civil servants and transforming them into *Lingkod Bayani*.

In his message to the SCS Scientists, NAST President and SCC Member Acd. William G. Padolina presented and discussed several S&T policy issues that need to be addressed and acted upon for the advancement of S&T in the country. Acd. Padolina emphasized and challenged the Scientists to be actively involved in the nation's development agenda which must include good governance and good science, which is comprised of convergence, partnerships and timeliness.



Director Azucena P. Esleta as she gave her message to SCS Scientists (photo left); Director Esleta with NAST Director Luningning E. Samarita-Domingo, NAST members Acd. Ceferino C. Maala and Acd. Ruben Villareal, Executive Secretary Acd. Evelyn Mae Tecson-Mendoza, STC members Acd. Eufemio T. Rasco, Jr., Acd. Salcedo L. Eduardo, and the rest of SCS Scientists (photo right).

9th Scientific Conference and Annual Meeting

SCS in collaboration with the Philippine Association of Career Scientists, Inc., held its 9th SCS Scientific Symposium at the Acacia Hotel Manila last December 8 with the theme “Harnessing Scientific Research Innovations towards ASEAN Integration.” which highlighted notable presentations by keynote speaker Academician Gisela P. Concepcion, current Vice President for Academic Affairs of the University of the Philippines and SCS Scientists.

Acd. Concepcion delivered a compelling lecture on achieving national key results areas identified by the National Economic and Development Authority through higher education and research and development which requires immense government support. Government funding is very much needed for the growth and development of a healthy,

intelligent and highly educated population, which in turn, will produce large pools of experts (PhDs and professionals), competent (Masters) and skilled (technical/vocational) manpower that will lead in innovation and the planning and implementation of sustainable programs in academic institutions, government agencies, industries and civil society in every region and priority economic sector of the country. Acd. Concepcion challenged the SCS Scientists whom she called “rock stars of Philippine Science” to work harder to help advance our S and T in the country to improve the socio-economic conditions and quality of life of our people.

The second part of the program highlighted the research works of five SCS Scientists. These scientists and their topics were: Dr. Marilla G. Lucero, Scientist I, DOH-Research Institute for Tropical Medicine, “Studies in Pediatric Pneumonia in Children”; Dr. Erlinda L. Mari,



SCS Scientists with STC members NS Dolores A. Ramirez, and Dr. Pag-asa D. Gaspillo, NAST members, Acd. Ruben L. Villareal and CM Reynaldo L. Villareal, SCC Executive Secretary Acd. Evelyn Mae Tecson-Mendoza, and Keynote Speaker, Acd. Gisela P. Concepcion.

Scientist I, DOST-Forest Products Research and Development Institute, “The Abaca, Paper, and Textile Industries in the 2015 ASEAN Integration”; Dr. Roel R. Suralta, Scientist I, DA-Philippine Rice Research Institute, “Roles of Roots in Sustaining Crop Productivity under Stressful Environments”; and Dr. Norvie L. Manigbas, Scientist I, DA-PhilRice, “PhilRice Collaborative Research Network in Asia Pacific Region in Developing Climate Resilient-High Temperature-Tolerant Rice”.

Support to SCS Scientists’ in Enhancing Productivity and Welfare

The Scientific Career System assisted the career scientists in the conduct of three consultation meetings to study the issues and needs of the member scientists which were for inclusion in the agenda of upcoming STC meetings and later will be presented to the Scientific Career Council for discussion.



SCS Scientists meeting held on August 28, led by Dr. Arvin Diesmos, Scientist III.

Promotion

A total of four (4) orientation seminars were held which were participated in by research and administrative personnel from Philippine Institute for Development Studies, Philippine Fiber Industry Development Authority, and Philippine Rice Research Institute, as well as personnel from local government units of Region XII, Department of Agriculture Regional Field Office, and Department of Environment and Natural Resources Region XII, and students and faculty members of Mindanao State University and University of Southern Mindanao.

Grants and Incentives

A total of ten scientists availed of the USD2000 foreign travel grant to present papers in international scientific conferences and symposia. Other forms of assistance available to Scientists are membership fee in international scientific organization, subscription fee to scientific journals, and publication assistance. In 2015, only one scientist availed of said assistance.



SCS Scientists meeting with NAST Director, Ms. Luningning E. Samarita-Domingo.



Acad. Ruben L. Villareal, former Chair of STC Agricultural Sciences giving orientation for participants in General Santos City on November 6, 2015

ADVISORY *Function*

Through its advisory activities, NAST PHL heightens public awareness, understanding, and appreciation of the role that science and technology plays in national development. The conduct of fora and roundtable discussions has encouraged public participation in open discussions of a wide range of topics on important S&T issues, such as biotechnology and biosafety, genetic engineering, intellectual property rights, information and communications technology, ethics, water, waste management, climate change, aging, Philippine Agriculture, biotechnology, energy, science education, population, among others.



37TH ANNUAL SCIENTIFIC MEETING

The National Academy of Science and Technology, Philippines (NAST PHL) conducted its 37th Annual Scientific Meeting (ASM) on July 8–9, 2015 at the Manila Hotel. The NAST PHL, established by Presidential Decree No. 1003-A in 1976 and the primary adviser to the government and science community on matters related to science and technology, chose ***The Challenges of Non-Communicable Diseases (NCDs): Responding through Multisectoral Action*** as the theme of this year's ASM.

The ASM aimed to extensively discuss the control and prevention of NCDs, share new conceptual framework in the development of NCDs, identify the major role of the various sciences, civil society and other sectors in the prevention of NCDs, and to draft recommendations to the President and policy makers responsible for the prevention and control of NCDs.

Acd. William G. Padolina, president of the NAST Philippines welcomed the participants and gave a brief overview of the two-day program, which included presentation and discussion of current knowledge on NCDs, research gaps, and policy interventions to address the growing prevalence of NCDs using the tools of science and technology.

Honorable Mario G. Montejo, secretary of the Department of Science and Technology, delivered the opening remarks and highlighted the DOST's RxBox project, co-sponsored with the University of the Philippines Manila, which harnesses telemedicine that can be an effective tool to initially diagnose the occurrence of NCDs in isolated and disadvantaged communities nationwide.

Senator Pia Cayetano, who served as the keynote speaker, emphasized the importance of being persistent in pursuing solutions that are relevant to society. She discussed in particular the bills that she helped to pass, such as the sin tax law, reproductive health law, among others. She also brought into light the economic cost of having non communicable diseases.

Experts shared their insights and experiences in the six plenary sessions of the meeting. In Plenary Session 1, Academician Antonio Miguel L. Dans, professor, University of the Philippines (UP) Manila and member of the NAST Health Sciences Division, discussed the Burden and Prevention of Non-Communicable Diseases. For Plenary Session 2, Dr. Ma. Concepcion C. Lizada, professor emeritus, UP Diliman, talked about *Synergy in Managing Non-Communicable Diseases*. National Scientist Angel C. Alcala, chair of the NAST Biological Sciences Division, discussed *Acute Non-Communicable Diseases Caused by Ingestion of Marine Finfish and Shellfish* in Plenary Session 3. During Plenary Session 4, Dr. Evangeline C. Santiago, Scientific Career System Scientist I and former head of the Analytical Chemistry Laboratory of the Natural Sciences Research Institute of UP Diliman, and Academician Filemon A. Uriarte, Jr., member of the NAST Engineering Sciences and Technology Division, discussed *Environmental Chemical Pollutants and NCDs: Prevention and Mitigation*. In Plenary Session 5, Mr. Gerardo F. Parco, senior environmental specialist of the World Bank, discussed *How Effective have the Clean Air, Clean Water,*



and Solid Waste Management Acts been? Lastly, in Plenary Session 6, Dr. Stella Luz A. Quimbo, professor, School of Economics, UP Diliman, expounded on *Does Sin Taxing Deliver us from Diseases? An Initial Assessment of the Health Impact of Sin Taxes in the Philippines*.

Three (3) simultaneous technical sessions were conducted on the second day of the event. Technical session 1 featured Dr. Beatrice Jayme-Tiangco, oncologist at Cancer Center, Medical City, who talked about the Role of Stem Cells in the Management of NCDs; in Technical Session 2, Dr. Jaime Z. Galvez Tan, president of Health Futures Foundation discussed the Role of Nutraceuticals in the Management of NCDs; and Technical Session 3 explored the Interaction of and between CDs and NCDs by National Scientist Ernesto O. Domingo, member of NAST Health Sciences Division.



Academician Antonio Miguel L. Dans (photo 1); DOST Undersecretary Amelia P. Guevara (photo 2); and DOH Undersecretary Kenneth Hartigan Go (photo 3).

Academician Antonio Miguel L. Dans, chair of the ASM resolutions committee, presented the resolutions to DOST Secretary Honorable Mario G. Montejo, who was represented by Dr. Amelia P. Guevara, DOST undersecretary for Research and Development, and Dr. Kenneth Hartigan Go, DOH undersecretary for Health Regulations. The resolutions emanated from the recommendations given during the pre-ASM roundtable discussions.

During the awarding ceremony on the second day, five (5) new Academicians joined the roster of NAST members. They are: Drs. Ceferino P. Maala, Jurgenne H. Primavera, Estrella F. Alabastro, Fortunato B. Sevilla III, and Edward H.M. Wang.

Academician Emil Q. Javier at the Open Forum



The following awards were also presented: Outstanding Young Scientists (OYS), The World Academy of Sciences (TWAS) Prize for Young Scientists in the Philippines, NAST Talent Search for Young Scientists, NAST Environmental Science Award, Outstanding Books and Monographs, Outstanding Scientific Papers, and Best Scientific Posters.

The 37th ASM was organized by the Academy with the assistance from various donors and sponsors. Almost a thousand scientists and researchers from key institutions and agencies gathered at the venue to attend and participate in this important event. The 37th ASM was hosted by the Health Sciences Division chaired by Academician Jaime C. Montoya and co-chaired by Academician Antonio Miguel L. Dans.

This annual activity serves as the leading forum for the presentation of scientific and policy research conducted by the Academy. Policy recommendations on appropriate interventions are submitted to the Philippine government and concerned sectors.



DOST Secretary Mario G. Montejo delivers his message during the Opening Ceremonies



Academician William G. Padolina with the new Academicians: Dr. Estrella F. Alabastro and Dr. Edward H.M. Wang during the PressCon.

THE CHALLENGE OF NON-COMMUNICABLE DISEASES DEMANDING MULTI-SECTORAL ACTION

37th Annual Scientific Meeting

8-9 July, 2015 | The Manila Hotel, One Rizal Park, Manila

RESOLUTIONS

After a thorough evaluation of the evidence on incidence, fatality and causality; after several long hours of meetings and roundtable discussions with all stakeholders; and after consideration of a broad range of analyses and proposed solutions; the National Academy of Science and Technology Philippines (NAST PHL), as the highest advisory body to the nation on matters of science, on their 37th Annual Scientific Meeting, forward the following resolutions to the President of the Philippines and the Cabinet, to Congress and to society-at-large.

RESOLUTION NUMBER 1: *We declare a crisis of lifestyle-related, non-communicable diseases (NCD) in the country, of unheralded extent and unprecedented severity, leading to the death of 300,000 Filipinos a year (WHO 2010) — more deaths than any single disaster, calamity or epidemic seen before.*

These diseases include stroke, heart attack, cancer, chronic lung disease, and many others. Implicated lifestyles include smoking, consumption of unhealthy food, and inadequate physical inactivity. Contrary to common belief, these conditions affect not just the aged, but also the young, including productive citizens in the prime of their life. Though popularly

known as diseases of affluence, in truth, they cause more deaths amongst the poor than amongst the rich. While lifestyle is generally regarded as a choice made by individuals, there is overwhelming scientific evidence that choices are heavily influenced by the environment. People consume unhealthy food because unhealthy food is cheaper, advertisements surround us, and food establishments allow no choice. People do not engage in sufficient physical activity because there is little access to open space, and no opportunities for non-motorized transport. The prevalence of smoking is high because tobacco is cheap, and we are flooded with promotional materials at an early age.

Rather than being mainly a personal choice then, lifestyle is in fact largely an adaptation to how we have built the world around us. Therefore rather than focusing on just public education, solutions that bear upon this epidemic must involve how communities are built, how businesses are run and regulated, and how laws are crafted and implemented. NCD control measures, therefore, must extend beyond the health sector, into the realm of society at large, including engineers, architects, farmers, fisher folk, teachers, businessmen, lawmakers, community leaders, family members, and more. There are no exceptions. All of society must be involved in addressing this epidemic.

RESOLUTION NUMBER 2: *We urgently propose the formation of a National Commission for the Prevention and Control of Non-Communicable Diseases, under the Office of the President, tasked to develop and oversee societal strategies for the prevention and control of non-communicable diseases.*

The commission shall be composed of selected cabinet secretaries or undersecretaries from pertinent departments, lawmakers, academicians, scientists, local government leaders and society/private sector representatives.

This national commission shall have the following responsibilities:

1. Analysis and oversight of existing policies, laws, plans and programs that may have an adverse impact on lifestyle;
2. Development of a research agenda for the development and continuous assessment of strategies that promote a healthy lifestyle; and
3. Formulation of recommendations for new policies and legislation if necessary.

The range of policies to be addressed includes:

1. Policies that encourage a healthy diet, for example, reducing the price of healthy food relative to unhealthy food, requiring provision of healthy options in food establishments, and instituting effective rules on food labelling;

2. Policies to incentivize the redesign of urban and rural infrastructure to provide adequate open space for physical activity, and to encourage non-motorized transportation;
3. Policies that further reduce the prevalence of smoking, such as strict prohibition of smoking in public places, total ban on tobacco advertisements, and a further increase in taxes on tobacco; and
4. Policies on environmental protection and pollution control.

Conclusion

While great progress has been achieved in the field of curative medicine, strategies for health promotion have lagged behind in our country. The main cause of this lag is the misconception that NCDs are diseases of individuals, solely related to lifestyle choices that they make. Based on current scientific knowledge, this theory is no longer tenable. Lifestyle is not a mere matter of personal choice. It is largely an adaptation to the world we have built around us. This means NCDs are not just diseases of individuals; they are diseases of society that will take societal reform to prevent.

NCD's have invaded us quietly and imperceptibly in the past few decades, and now they have reached a critical level. Millions of Filipinos are affected, and unless something is done, hundreds of thousands will continue to die unnecessarily each year, at huge economic and social cost.

We need to do something about the situation. For the sake of our people, we need to do it now.

Scientific Posters Session and Awards

The ASM features the scientific poster session joined by scientists and researchers from all over the country. For this year's ASM, there were 294 accepted entries — Agricultural Sciences Division (ASD), 56; Biological Sciences Division (BSD), 113; Engineering Sciences and Technology Division (ESTD), 15; Health Sciences Division (HSD), 25; Mathematical and Physical Sciences Division (MPSD), 49; and Social Sciences Division (SSD), 36. The criteria for judging the Best Scientific Posters were scientific merit, importance and relevance to national development, and poster effectivity.

The following are the winners in this category for this ASM:

AGRICULTURAL SCIENCES

Physiological Response of Rice and Weeds Under Anaerobic Germination and Its Implications for Crop Management by Frederickson D. Entila, Swarna Herath, Ofelia S. Namuco, Evangelina S. Ella, David E. Johnson, and Abdelbagi M. Ismail

BIOLOGICAL SCIENCES

Novel Antituberculosis, Anti-Staphylococcal, Cytotoxic, Anti-Tyrosinase, and Anti-Acetylcholinesterase Oxidized C-6 Derivatives from Philippine Uvaria Species by Peter Yousel M. Rubio, Angeli Izza G. Flores, Arianne Letada, Hans-Martin Dahse, Scott G. Franzblau, and Allan Patrick G. Macabeo

MATHEMATICAL AND PHYSICAL SCIENCES

Spectrophotometric Determination of Coenzyme Q10 Using Polyaniline Film as Optical Sensor by Ma. Cristina B. Portilla, Jason Paul C. Monlinong, Fiona Gee V. Cariaga, and Cherrie B. Pascual

ENGINEERING TECHNOLOGY

Delignification and Saccharification of Sweet Sorghum Bagasse Using the Combination of Alkaline and Fungal Treatment by Dane Mikhael S. Calica and Shirley C. Agrupis

SCIENCES AND

HEALTH SCIENCES

Comparative In-Vitro Effect of Bevacizumab, Mitomycin C, 5-Fluorouracil and Triamcinolone Acetodine on Human Tenon's Fibroblast Primary Culture by Pius Jonas Ocampo, Ma. Margarita Lat-Luna, Joseph Anthony Tumbocon, Polly Chao-Po, Andrei Martin, Ma. Luisa Enriquez, Loraine Kay Cabral, and John Timothy Hangod

SOCIAL SCIENCES

Education and Internally Displaced Persons: Do Schools in Lanao Have Support Mechanisms for Rido-Affected Students? by Juvanni A. Caballero and Mark Anthony J. Torres



Ribbon Cutting Opening the Posters Session: Academician Antonio Miguel L. Dans, National Scientist Ernesto O. Domingo, Academician William G. Padolina, Ms. Luningning E. Samarita Domingo, DOST Secretary Mario G. Montejo, DOST Undersecretary Rowena Cristina L. Guevara, and Academician Ruben L. Villareal (photo left); National Scientist Ernesto O. Domingo, Chair, Board of Judges for the Best Scientific Poster Awards with Academician Remigio M. Olveda, Chair, Scientific Posters Committee placed the ribbon on one of the best scientific posters awardees (photo right).

ON BILLS AND PROPOSED POLICIES

As adviser to government, NAST provides advice on matters relating to and/or affecting science and technology.

Academician William G. Padolina attended the meetings on the following bills and proposed policies:

▣ February 17, 2015, **HB No. 5155 “An Act Amending R.A. No. 8439, Otherwise Known as the Magna Carta for Scientists, Engineers, Researchers and Other Science and Technology Personnel in Government by Extending the Services of a Scientist Who is Due for Compulsory Retirement for a Maximum Period of Five (5) Years”** introduced by Representative Fernando V. Gonzales.

▣ March 17, 2015, Draft Substitute Bill (**HB 5155**) on the **Magna Carta for Scientists, Engineers and Other Science and Technology Personnel in the Government**, introduced by Representative Fernando V. Gonzales.

▣ March 11, 2015, 2nd Technical Working Group meeting to fine tune **HB No. 5388 “Strengthening the Balik Scientist Program”** introduced by Representatives Victor J. Yu, Mariano Michael M. Velarde, Jr., Jesulito A. Manalo, and Mariano U. Piamonte, Jr.

▣ March 17, 2015, Continuation on the deliberation of **HB No. 5388, Strengthening the Balik Scientist Program**, introduced by Representatives Victor J. Yu, Mariano Michael M. Velarde, Jr., Jesulito A. Manalo, and Mariano U. Piamonte, Jr.

Likewise, on August 12, 2015 at the House of Representatives, Quezon City, Academician Filemon A. Uriarte Jr. presented his paper on **“Waste Prevention and Mitigation Technologies Focusing on WTE Options”** in support of **HB No. 3161, An Act Allowing the Use of Incinerators in Burning Municipal, Bio-Medical and Hazardous Waste Amending for the Purpose Section 20 of R.A. No. 8749, “An Act Providing for a Comprehensive Air Pollution Control and For Other Purposes”**.

His paper was used to support the bill.

House body approves bill extending scientists' services for five years

By Philippines News Agency on February 18, 2015

MANILA — The House of Representatives Committee on Science and Technology on Tuesday approved a proposed measure that will amend Republic Act 8439, also known as the “Magna Carta for Scientists, Engineers, Researchers and Other Science and Technology Personnel in Government.”

Albay Rep. Fernando V. Gonzales authored House Bill 5155, or An Act Amending R.A. No. 8439 by extending the services of a scientist who is due for compulsory retirement for a maximum of five years.

“It is a well-known fact that even at the age of 65, scientists are still at the peak of the mental capabilities. Hence, they are still very capable of working on scientific projects that they had been working on prior to their retirement,” said Gonzales in his introductory note.

By allowing a maximum of five years extension, Gonzales said, a scientist will have been able to satisfactorily finish whatever projects needed to be completed.

The legislator also pointed out during the hearing chaired by Zamboanga del Sur Rep. Victor J. Yu that compulsory retiring the scientists will deprive the country and the people of knowledge, ideas, skills, and even leadership abilities that the scientists had acquired over the years.

The extension of services is subject to the following conditions:

- The research project is within the priority research and development programs of the Department of Science and Technology (DOST) and is identified as strategic to the national development as certified by the DOST Secretary;
- The scientist is still mentally and physically fit to complete the project; and
- The request for extension of services shall be submitted to the Civil Service Commission for approval at least three months prior to the date of the compulsory retirement of the scientist.

Co-authors of the bill were Reps. Mariano U. Piamonte Jr. (A TACHER Party-list), Mariano Michael M. Velarde, Jr. (BUHAY Party-list), Roman T. Romulo (Pasig City), Edgardo Masongsong (1-CARE Party-list), Francis Gerald Abaya (1st District, Cavite), Erico Aristotle C. Aumentado (2nd District, Bohol), and Evelina G. Escudero (1st District, Sorsogon).

PRE-ASM ROUNDTABLE DISCUSSIONS AND CONSULTATIONS

In preparation for the 37th Annual Scientific Meeting, roundtable discussions and consultation meetings with different government agencies concerned with the ASM theme were conducted from August 2014 to June 2015. Results and recommendations from these activities were incorporated in the commissioned papers that were presented during the ASM.

Roundtable Discussion on Designing for Healthy Work and Living Environment

Organized by the Engineering Sciences and
Technology Division (ESTD)
February 5, 2015; Hotel Jen Manila
Focal Person : Acd. Aura C. Matias

The RTD discussed the quality of work life and living of Filipinos with focus on health monitoring, promotion of work life balance, and design initiatives for green living spaces. Speakers emphasized the importance of having healthy workers and safe workplaces as contributors to sustainable development, which, according to them, is one of the keys to poverty reduction.

Recommendations. After the discussion, it was recommended that (1) a policy on occupational health and safety (OHS) programs should be created to influence industrial processes, which contribute to pollution and environmental exposures that are hazardous to health; (2) OSH programs should be strengthened, which contribute to improving the employability of workers through workplace redesign, maintenance of OSH, training and retraining, assessment of work demands, medical diagnosis, health screening and assessment of functional capacities; (3) create and demand for an environment that is livable, comfortable and safe to the public such as walking-, biking-, pedestrian-friendly communities. For urban communities, compact spaces are the most ideal for such demands; (4) nutrition labeling in food establishments to determine the nutritional content of foods should also be

demand; (5) need for legislation that will incentivize and not penalize developers for providing open spaces in the communities; and (6) come up with a more interdisciplinary framework or policy that will make change faster and easier.



Ms. Anna Maria M. Gonzales, sustainability/planning manager of Urban and Regional Planning Division, Ayala Land, Inc. on "Green Living Building Design: Focus on Healthy Ecosystems" (Top photo) and Dr. Marilou D. Renales, chair of the Residency Training Program Committee, Philippine College of Occupational Medicine, Inc. (photo left).

Roundtable Discussion on Environmental Chemical Pollutants and Non-Communicable Diseases

Organized by the Mathematical and Physical Sciences Division (MPSD)
February 24, 2015; Hotel Jen Manila
Focal Person: Acd. Evelyn Mae Tecson-Mendoza

The RTD discussed the different environmental chemical pollutants, their effects on health, and ways on how to address the problems through identification of research gaps and policy recommendations. Experts talked about monitoring organic pollutants in the environment, the interactions between the individual's genetic make-up and environmental factors, and the effect of traffic-related air pollution (TRAP) on health. As the government arm in-charge of addressing the pollution concerns of the country, the Department of Environment and Natural Resources through the Environmental Management Bureau presented its programs on the prevention and control of pollution in the country. During the open forum, the participants raised their concerns and noted the importance of science communication to laymen, which according to them is a key to the better understanding of the technical side of the topics. It was suggested to establish linkages and collaboration among the institutions of the resource persons for more research opportunities. This will also serve as an avenue for a multi-disciplinary approach to the research gaps and other concerns regarding environmental chemical pollutants and NCDs.

Recommendations. To address the growing concern surrounding environmental pollutions and non-communicable diseases, it was recommended that scientific research on environmental chemical pollutants and NCDs should be effectively communicated to the general public. An effective communication and collaboration between the regulatory agency and environmental researchers should also be established to strengthen the linkages and partnership among concerned institutions. These will serve as an avenue for a multi-disciplinary approach to the research gaps and other concerns regarding environmental chemical pollutants and NCDs. Finally, it was recommended to include environmental education in the school curriculum to educate the youth early about the effects and relationship of environmental chemical pollutants and NCDs.



Asst. Director Eva S. Ocfemia of the Environmental Management Bureau (EMB) –DENR presented the “DENR-EMB Programs on Prevention and Control of Pollution.”

Roundtable Discussion on Non-Communicable Diseases and Other Health and Wellness Risks from the Marine Environment

Organized by the Biological Sciences Division (BSD)
March 31, 2015 | Hotel Jen Manila
Focal Person: Acd. Rhodora V. Azanza

This RTD discussed vectors and pathways of common Philippine health and wellness risks and hazards from the marine environment. Researches being undertaken and monitoring and management schemes in these areas were reviewed and discussed by the invited experts.

Recommendations. At the end of the discussion the following were recommended: (1) continue producing anti-venom and make them available in hospitals all over the country; (2) conduct research on sea snakes and possible use of snake venom; (3) local government units with reported incidents of poisonings must regulate shellfish extraction until toxin level is less than the critical value; (4) local task force must be organized to regularly monitor and ensure safe consumption of marine products and conduct coastal clean-up; and (5) strengthen the monitoring of occurrence of coliform in marine organisms.



National Scientist Angel C. Alcala , resource person during the RTD on Non-Communicable Diseases and other Health and Wellness Risks from the Marine Environment

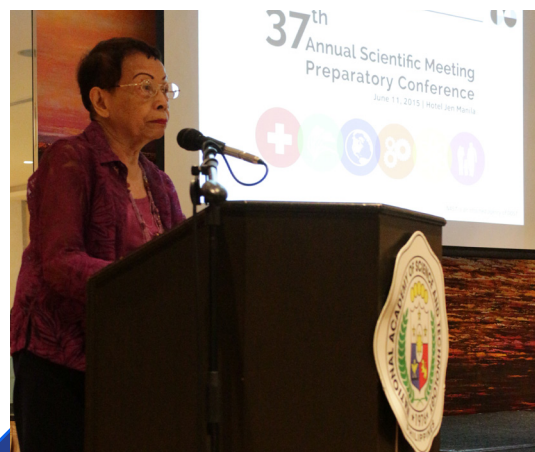
37th Annual Scientific Meeting Preparatory Conference

Organized by the 37th ASM Steering Committee and Resolutions Committee
June 11, 2015 | Hotel Jen Manila
Focal Person: Acd. Antonio Miguel L. Dans

The pre-conference was conducted to integrate the results of the pre-ASM roundtable discussions and finalize the resolutions that will be presented on the second day of the ASM on July 9, 2015.

The pre-conference inputs came from Acd. Antonio Miguel L. Dans, chair of the 37th ASM Resolutions Committee and member of the Health Sciences Division, NAST PHL. The draft four-pronged resolutions emphasized disease prevention through multi-sectoral interventions with the involvement of the community and its leadership besides the health sector. This proposed set-up is envisioned to warrant passage of laws pertaining to infrastructural design, adaptation of policies that encourage healthy diet, reduction of smoking, and legislations that strengthen pollution control and environmental protection.

Recommendations. Some of the major recommendations from the discussion include intensification of information, education, and communication campaign on NCD; enhancement of the existing programs related to NCD and initiating innovative measures and mechanisms to address NCD; strict implementation and enforcement of policies and laws pertaining to infrastructure, food labelling, no-smoking in public places, Clean Air Act, pollution control and environmental protection already exist; and conduct of inter/transdisciplinary research and development (R&D) in line with the challenges of NCD.



National Scientist Mercedes B. Concepcion welcomed the participants from DOST, health and environmental sectors, the academe, private and government institutions, and friends from the media.



Academician Jaime C. Montoya, chair of the 37th ASM Steering Committee, gave the objectives of the pre-conference.

ROUNDTABLE DISCUSSIONS, INFORMATION FORA, LEGISLATIVE FORA ON SPECIAL S&T CONCERNS

Roundtable Discussion on Molecular Pathogenesis of Infectious Diseases

Organized by the Health Sciences Division (HSD)
Co-Sponsor: University of the Philippines Manila
Case Western Reserve University
Department of Science and Technology
February 20, 2015; Hotel Jen Manila
Focal Persons: Dr. Edsel Maurice T. Salvaña, OYS 2010
and Acd. Jaime C. Montoya

The RTD was conducted to learn about and understand the molecular pathogenesis of infectious diseases and their mechanisms to determine possible treatment strategies to minimize morbidity and mortality; and understand disease interactions at the molecular level and how these affect pathogenicity and disease outcomes.

Recommendations. At the end of the discussion, it was recommended that a formal collaboration and linkages among the University of the Philippines Manila, Case Western Research University, and the Department of Science and Technology through the Philippine Council for Health Research and Development (DOST-PCHRD) be established and to come up with evidence-based recommendations that can be used by the Department of Health (DOH) and in the formulation of health policy in the Philippines.

Roundtable Discussion on Universal Health Care

Organized by the Health Sciences Division (HSD)
in partnership with the Department of Health
February 23, 2015 | Casino Español, Manila
Focal Person: National Scientist Ernesto O. Domingo

Health System Shapers (HSS) is a multi-stakeholder collaboration, which aims to attain Universal Health Care (UHC) or Kalusugang Pangkalahatan (KP). It is a partnership among the Department of Health, the National Academy of Science and Technology, Philippines (NAST PHL), University of the Philippines - National Institutes of Health Universal Health Care Study Group (UHCSG), Asian Institute of Management Dr. Stephen Zuellig Center for Asian Business Transformation, Pharmaceutical and Healthcare Association of the Philippines (PHAP), and the GT-Metro Foundation, Inc.

The first in the series of sectoral discussions, this RTD provided a platform to discuss the sectors' visions and roles in the promotion of UHC. It was attended by representatives from partner institutions and organizations, as well as representatives from the print and broadcast media sector.



Professors from UP Manila and Case Western Reserve University: (from L-R) Acd. Carmencita D. Padilla, Dr. Federico Perez, NS Ernesto O. Domingo, Dr. Robert Salata, Dr. Ronald Blanton, and Dr. Raul V. Destura.



Speakers and participants of the RTD (top photo) and Academician William G. Padolina delivers his welcome remarks (photo right).



Roundtable Discussion on Managing Philippine Coastal and Inland Fisheries

Organized by the Agricultural Sciences Division (ASD)
and Biological Sciences Division (BSD)
March 17, 2015; Acacia Hotel Manila
Focal Persons: Acd. Rafael D. Guerrero III (ASD)
and National Scientist Angel C. Alcala (BSD)

Coastal and inland fisheries comprise the municipal fisheries of the Philippines, which contribute to about 26% to the country's total fisheries production and employ more than 1 million Filipinos among whom are the "poorest of the poor." In 2012, 1,280,849 metric tons of fish were caught from coastal and inland waters with 84% from the former and 16% from the latter. The main causes of the continuing decline of the country's municipal fisheries production are overfishing, habitat degradation, and poor management. There is a need for a "balanced and focused management approach for all coastal resources including fisheries to achieve food and environment security and poverty alleviation".

This RTD discussed and reviewed the government policies and programs for the management of the country's municipal fisheries and identified and recommended strategies for the sustainable management of the country's municipal fisheries for policy consideration.

Recommendations. To better manage the Philippine coastal and inland fisheries, it was recommended that the national and local government should recognize the importance of science and technology in fisheries



National Scientist Gelia T. Castillo, member of the NAST Social Sciences Division, during the RTD's open forum.

management. Small provinces must also start profiling of inland fisheries, and inventory of indigenous species, among others. There is also a need to have protected zones, which must be permanently protected for 20–40 years. It was suggested that local government units and local communities should monitor activities and determine the sources of pollutants.

Roundtable Discussion on Philippine Marginal Seas

Organized by the Mathematical and Physical
Sciences Division (MPSD)
Co-Sponsors: National Research Council of the
Philippines (NRCP)
Department of Science and Technology
March 24, 2015; Hotel Jen Manila
Focal Person: National Scientist Lourdes J. Cruz

The Philippine marginal seas have the highest marine biodiversity in the world. Over 60% of Filipinos live in coastal communities and depend on the marginal seas for a great variety of food, transportation and sources of raw materials for industry and commerce. Unfortunately many marine species are rapidly disappearing due to overharvesting and habitat degradation.

The RTD was conducted to provide the scientific basis for the prudent use of coastal and marginal sea resources as the country faces the challenges of food security, climate change and natural disasters. It gathered a multidisciplinary group of physical, biological, ecological and social scientists and engineers to discuss how the S&T community can contribute to the sustainable development of the coastal zones and marginal seas of the Philippines.

Further, these experts discussed the participatory planning and management of marginal seas resources essential to the nation's ability to benefit from the ASEAN Economic Community (AEC), the envisioned ASEAN Socio-Cultural Community (ASCC), and the ASEAN Political-Security Community (APSC).



Dr. Cesar L. Villanoy presents the status and challenges of the Philippine Marginal Seas.

Recommendations. After the discussion, it was recommended that research should be conducted on the dynamics of marginal seas, including accurate representation of winds over the archipelagic basins and land-sea-air interaction, as well as the current state of human communities, particularly indigenous knowledge on natural resource management, climate, economic subsistence, and maritime skills. There was also a proposal for the establishment of the Philippine SIMSEA Committee aside from the Regional SIMSEA Office being hosted by the UP Marine Science Institute. The Philippine SIMSEA Committee shall (1) promote strategic collaborations among Philippine organizations and concerned individuals in relation to the sustainability of Philippine marginal seas; (2) help ensure sustainability of the project by seeking funds from government and non-government organizations for its multi- and transdisciplinary projects; and (3) assist in the enhancement of the impacts of the SIMSEA program through dialogues, conferences, and other activities targeting appropriate government agencies and general public. The said committee will hopefully attract and motivate young scientists to pursue research on the country's marginal seas.

Roundtable Discussion on Livestock Nutritional Biotechnology: Pre and Probiotics in Food Animals

Organized by the Agricultural Sciences Division (ASD)

May 11, 2015; Hotel Jen Manila

Focal Person: Acd. Libertado C. Cruz

Prebiotics are non-digestible food substances that selectively stimulate the growth of favorable species of bacteria in the gut, while probiotics are live cultures of organisms supplemented in diets to improve the microbial balance in the gut, as defined by the American Association of Swine Veterinarians. Both pre- and probiotics are supplemented in diets of livestock to promote overall production performance. Unfortunately, despite the improvement in production, the improper use of antibiotics as pre and probiotics has long-term adverse effects. Their residues are deposited and accumulated in animal tissues and pose threats to the health of the general public who consume livestock food products.

This RTD was conducted to come up with policy recommendations on regulations and guidelines on the use of antibiotics and pre/probiotics in food animal production.

Recommendations. It was recommended that the producers should be aware of the importance of reading and observing label instructions on withdrawal requirements of the drugs they are using. Producers and raisers should also be educated on the adverse effects of improper use of antibiotics. On the other hand, regulatory agencies should heighten surveillance, through regular mandatory testing, for presence of residues. Finally, as the end user, the consumers should be aware of the antibiotics residues in the animal products that they are buying.



Participants of the RTD from different government offices and private sectors.



Academicians Ruben L. Villareal and Libertado C. Cruz with the resource speakers of the RTD.

Roundtable Discussion on Screening of Genetic Defects in Domestic Livestock Industry

Organized by the Agricultural Sciences Division (ASD)
Co-Sponsors: Department of Science and Technology
Philippine Carabao Center
May 14, 2015; Acacia Hotel Manila
Focal Person: Acd. Libertado C. Cruz

Developments in gene technology have allowed the identification of several genetic defects in livestock that are associated with impaired reproduction, early embryonic mortalities, low neonatal survival, poor animal performance, and poor product quality. These developments allow animal breeders to screen their breeder stocks for known genetic defects to avoid significant economic losses. In view of the importance of these issues on the overall profitability and viability of the livestock industry, the RTD was conducted to come up with policy recommendations on the mandatory screening of breeders in commercial farms and of all incoming genetic materials (live animals, semen, embryos) for genetic defects in the country.

Recommendations. After the discussion, the group concluded that the participation of the different cooperatives and private livestock breeders is necessary in building the data banks for the study of genetic diseases. There should also be an agreement between public-private institutions to improve livestock breeding program in the country.



Dr. Ming-Che Wu, division chief of Breeding and Genetics, Taiwan Livestock Research Institute delivered his presentation on "Screening for Genetic Defects in Domestic Animals – ACTION Scheme."

Roundtable Discussion on Animal Genetic Resource Management and Cryobanking

Organized by the Agricultural Sciences Division (ASD)
Co-Sponsors: Department of Science and Technology
Philippine Carabao Center
June 5, 2015; Hotel Jen Manila
Focal Person: Acd. Libertado C. Cruz

Conservation of existing indigenous breeds of livestock as well as those animals raised for economic gains is an essential undertaking in ensuring that valuable genes shall be available for future breeding and development efforts. Cryobanking is one practical way to conserve these valuable genetic resources. The RTD was conducted to come up with policy recommendations on animal genetic resource conservation and guidelines for cryobanking in the Philippines.

Recommendations. The following recommendations were generated:

- (1) Establishment of a breeding center that will maintain stocks in purebred forms of an entity similar to the national seed board.
- (2) Effective conservation efforts should consider and prioritize an accurate and thoughtful assessment of genetic diversity; (3) challenges and recommendations regarding the animal genetic resources should consider and prioritize an accurate and thoughtful assessment of genetic diversity.
- (3) Challenges and recommendations regarding animal genetic resources such as management needs and government commitment.
- (4) There is a need to actively campaign in Congress and Senate for the approval of the proposed law HB No. 3880.
- (5) Proper attention should be given to indigenous animals as a source of food for the majority of the Philippine population.
- (6) Protection of smallholder farmers who handle the majority of native breeds.
- (7) Promotion of organic livestock farming using indigenous breeds.

Roundtable Discussion on Folic Acid

Organized by the Health Sciences Division (HSD)
June 23, 2015; Hotel Jen Manila
Focal Person: Acd. Carmencita D. Padilla

The RTD reviewed the burden of neural tube defects and folic acid deficiency in the Philippine and in the world. Invited experts discussed the fortification efforts in the country and oriented the various stakeholders on the proposed legislations on folic acid supplementation and fortification with particular emphasis on the role of government agencies, the academe, and the private sector.

Recommendations. Efforts to address folic acid deficiency require coordination among the different public and private institutions to support the proposed policy. Fortification of wheat flour with folic acid in the Philippines is needed to provide 288 µg of folic acid per day to reproductive age women and prevent about 2,565 Neural Tube Defects (NTDs) per year. The need for collaborative researches, especially with the academe to support the policy-recommendation was also emphasized.



Dr. Karen Codling,
executive officer, Food
Fortification Initiative—
Asia presented “Folic Acid
Fortification: Evidence and
Global Progress.”



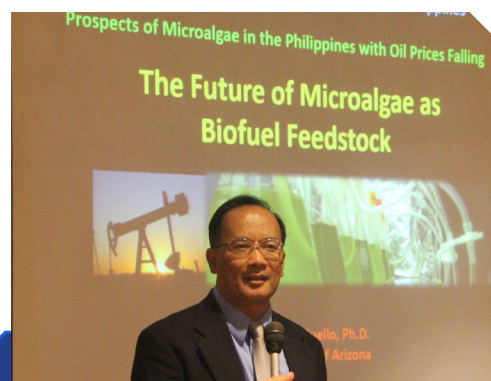
Participants of
the RTD on
Folic Acid.

Roundtable Discussion on Prospects of Microalgae in the Philippines

Organized by the Engineering Sciences and Technology
Division (ESTD)
Co-Sponsors: United States Agency for International
Development – Science, Technology,
Research and Innovation for Development
(USAID-STRIDE)
Department of Science and Technology (DOST)
September 22, 2015; Hotel Jen Manila
Focal Person: Acd. Alvin B. Culaba

The RTD assessed the prospects of microalgae production and processing in the country in relation to global scenario of oil prices. The multi-sectoral discussion also explored the possible contribution of science and technology (S&T) community in the cultivation and utilization of microalgae as biofuel feedstock. It also identified some of the research challenges in the production of biofuels from microalgae and the role of the industry, the government, and the research community in the development of microalgae in the Philippines.

There are plans to establish the Philippine Algae Research Center (PARC) in cooperation with Congressional Commission on Science Technology and Engineering (COMSTE), Department of Agriculture (DA) and Department of Science and Technology (DOST) in the country to intensify research studies on drying technology and molecular dynamics of microalgae.



Dr. Joel L. Cuello, a professor of Agricultural and Biosystems Engineering and the Director of Global Institute for Strategic Agriculture on Dry Lands (GISAD) at the University of Arizona and also a De La Salle University (DLSU) USAID-STRIDE Visiting Professor gave his presentation on “The Future of Microalgae as Biofuel Feedstock”.

Roundtable Discussion on Behavioral Economics and Public Policy: An Overview

Organized by the Social Sciences Division (SSD)
September 29, 2015; New World Manila Bay Hotel
Focal Persons: NS Raul V. Fabella and
Acd. Michael L. Tan

Behavioral economics is defined as a synergic mix of economics and psychology. It plays an important role in crafting informed policies, which is essential in creating practical and effective policies for social development. The RTD was conducted to introduce participants to the important findings of behavioral economics and how it has enriched the study of economic behavior and public policy.

Recommendations. Some of the major recommendations from the discussion were: (1) design social policies according to ground level data-based behavior regularities to improve policy; (2) identify ways to engender social cohesion required for successful collective action; (3) identify ways to make people feel involved and effective in bringing change; and (4) conduct another RTD on trust issues and impacts of social media on social cohesion.



*The resource speakers:
(from L-R) National
Scientist Raul V. Fabella,
Dr. Geoffrey M. Ducanes,
and
Dr. Stella Luz A. Quimbo.*



Roundtable Discussion on Electricity Pricing through Wholesale Electricity Spot Market (WESM)

Organized by the Engineering Sciences and Technology Division (ESTD)
Co-Sponsors: Philippine Electricity Market Corporation (PEMC)
October 9, 2015; Hotel Jen Manila
Focal Person: Acd. Alvin B. Culaba

The RTD discussed the fundamental concepts of electricity pricing and pricing mechanism in the WESM. It also explained how variable renewable energy resources are scheduled for dispatch purposes and their correlative responsibilities in maintaining system security and reliability. The financial impact of the integration of Feed-in-Tariff (FiT) qualified resources in the WESM to the end-users was also presented.

Recommendations. Some of the major recommendations from the discussion and the synthesis were to (1) create a more comprehensive study on the impact on reserve requirements of the intermittent renewable energy resources by the System Operator; (2) study the impact on transmission requirements of the integration of intermittent renewable energy resources; (3) the Department of Energy should provide and disseminate information regarding electricity trading pricing especially targeted to the public; (4) concerned offices should provide the different stakeholders of real-time posts updates regarding the figures and data on electricity on the internet; (5) WESM to construct a dynamic study on trading and pricing of electricity not just on simulation basis; and (6) have a proper discussion or regulation of the concerns regarding the concept of emerging innovations such as the battery storage.



RTD participants with the resource speakers.

Roundtable Discussion on Information Sharing in Science, Technology and Innovation

In coordination with the National Research Council of the Philippines and the University of the Philippines System October 29, 2016; New World Manila Bay Hotel
Focal Person: National Scientist Lourdes J. Cruz

This RTD gathered stakeholders from the government, academe, and industry to consider and deliberate on the integration of the effort, to link the national information sharing initiative of DOST Region IV with the recent International Development Research Centre (IDRC) supported project of NRCP and the National Research Council of Thailand on information sharing in the Southeast Asian Region.

Recommendations. After the discussion, it was recommended that (1) social scientists should assess the applicability of research outputs to the communities, while researchers should consult the public on what they really need before doing any research through close coordination and open forums; (2) CHED's Journal Accreditation Service (JAS) has to graduate from being a "project status" to being institutionalized and should have continuous funding support from the government; (3) the government should step up and assign an office to manage data-sharing; (4) the DOST Science and Technology Information Institute can be in charge of the data repository and should be provided with budget from the government; (5) low-quality journals should be discouraged from publishing so that the focus can be placed on the high-quality journals or provide assistance to the low-quality journals to allow them to grow; (6) help researchers publish in peer-reviewed journals and encourage quality not journal quantity publication; (7) different organizations should give importance to journals before the quality can be improved; (8) link up with local repositories first before entering ASEAN; and (9) libraries should be tapped to be part of this endeavour.



Dr. Petchara Sungkhaworn, former director of the Research Information and Data Management of the National Research Council of Thailand (NRCT), discussing the Southeast Asian Research Repository.

Roundtable Discussion/Workshop for University of the Philippines (UP) professors and instructors entitled "Meeting the Microbiology Education Needs of the Manufacturing Industry"

Organized by the Biological Sciences Division (BSD)
November 23, 2015; NAST Conference Hall,
Bicutan, Taguig City
Focal Person: Acd. Asuncion K. Raymundo

This activity was conducted as a follow up activity to the RTD on Assessment of the Microbiological Needs of the Food and Pharmaceutical Industries conducted last January 27, 2014 at the Acacia Hotel Manila. It explored possibilities and means by which the University of the Philippines can help meet the microbiology needs of the manufacturing industry. It reviewed existing microbiology curricular programs at the UP and determined the possibility of expanding the microbiology programs of the different component universities. They also looked into the feasibility of inter-CU collaboration in promoting microbiology and expanding the workforce for the industry. In the end, strategies were crafted for graduates of B.S. Biology and other related degrees to be qualified as accredited microbiologists.

Future Plans. (1) A proposal for UP Diliman to offer BS Biology Course will be prepared and submitted by January 2016. (2) A proposal will be prepared and submitted by end of 2016 for UP Baguio to propose a BS Biology major in Microbiology, but with the adoption of microbiology courses from other component universities. (3) UP Visayas and UP Manila will streamline their curriculum so that BS Public Health will be credited to the exam. (4) UP Mindanao should collaborate with the BS Food Science faculty to be able to offer a Microbiology major in Food Science and to include a Microbiology major in the proposed MS Applied Science program.



The professors and instructors who participated in the workshop with Academician Asuncion K. Raymundo.

Science Information Forum on GM Crops in the Philippines: Impact and Prospects

Organized by the Agricultural Sciences Division (ASD)
March 25, 2015; Hotel Jen Manila
Focal Person: NS Dolores A. Ramirez

Commercialization of genetically modified (GM) corn started in 2003 with Bt or insect-resistant corn. GM corn production has increased from about 12,000 hectares in 2003, to 831,000 hectares in 2014. The Philippines started exporting corn in 2013.

The SIF evaluated the socio-economic impact of the GM corn technology on Philippine agriculture and discussed the factors affecting the development, testing and commercialization of Pinoy GM products. Pinoy GM crops in the pipeline, such as the golden rice, delayed ripening and papaya ringspot virus (PRSV)-resistant papaya, and Bt (*Bacillus thuringiensis*) eggplant became the focus of discussion. One of the challenges faced by the development of GM products in the country is the controversy of genetically engineered crops despite their economic and environmental benefits.



Dr. Benigno D. Peczon, president of Coalition for Agriculture Modernization in the Philippines (CAMP) delivered the synthesis of the discussions and presentations.

Recommendations. Some of the major recommendations from the discussion include (1) retooling and training of scientists on molecular biology and biotechnology; (2) lobbying for increased budget for S&T in the country; (3) establishing strategic alliances and collaborations among stakeholders; (4) cultivating and maintaining complementation (instead of competition) in research; and (5) seeking for support from policy makers in creating and implementing policies that will promote agricultural biotechnology, more specifically, genetically engineered or modified crops.

Science Legislative Forum on Rare Diseases

Organized by Health Sciences Division (HSD)
September 3, 2015; Philippine International Convention Center (PICC), Pasay City
Focal Person: Academician Carmencita D. Padilla

The forum, intended for policy makers from the legislative branch of the government, reviewed the global scenario of rare diseases, assessed the Philippine situation, and discussed challenges in the care of patients. It oriented the various stakeholders on the elements of the Rare Disease Act and discussed the role of government agencies.

Recommendations. The following recommendations came up during the open forum, (1) document the economic impact of rare diseases to help convince politicians to pass the bill; (2) form a consortium of pharmaceutical companies and agencies that will take on the development of medicine for rare diseases; (3) request for a certification from Malacanang that the bill is urgent and of national interest; (4) collaborate with corporations and other agencies that can be sources of funding; (5) promote awareness in the academe; and (6) enhance pool of experts in genetics.



Acad. Carmencita D. Padilla, Focal Person of the SLF and Member of the Health Sciences Division of NAST Philippines, discussing the objectives of the forum.



The active participants of the RTD with Acads Evelyn Mae Tecson Mendoza, National Scientist Gavino C. Trono Jr. and Acad. Carmencita D. Padilla.

LECTURES, CONFERENCES, SUMMIT

Lecture on Smarter Homes, Better Healthcare

Organized by the Health Sciences Division (HSD)
Co-Sponsor: Philippine Council for Health Research and Development (PCHRD)
August 21, 2015; The Manila Hotel
Focal Person: Acd. Jaime C. Montoya

Dr. Mohamed Jamal Deen, president of the Academy of Science, Royal Society of Canada gave a lecture on smart and cost-effective medical home solutions using advances in information and communication technologies and autonomic computing towards better healthcare for the elderly. According to him, healthcare is challenged by “three interlocking crises”—rising cost, older population, and quality of healthcare.

Recommendations. (1) Universal health in the elderly age group should be addressed by utilizing cost-effective technologies for health care at home. (2) There is a need to further develop eHealth projects in the Philippine community, specifically in rural health units. (3) Governance, architecture, and standards should be key components of the national health information system. (4) Invest in Filipino researchers to prevent brain drain. (5) Use cognitive computing to help healthcare organizations provide personalized healthcare platforms to consumers.



Dr. Mohamed Jamal Deen, president of the Academy of Science, Royal Society of Canada, gave a presentation on “Smarter Homes, Better Healthcare.”

2015 Philippine Innovation Summit “Toward an Innovation Economy: Building the Philippine Innovation Ecosystem”

Hosts: National Academy of Science and Technology
DOST’s Technical Working Group on
Improving Science
Co-Sponsors: United States Agency for International
Development (USAID) and
Science, Technology, Research and Innovation
for
Development (STRIDE)
September 21, 2015; Crowne Plaza Manila Galleria,
Ortigas Avenue, Quezon City
Focal Persons: National Scientist Lourdes J. Cruz and
Acd. Alvin B. Culaba

The 2015 Philippine Innovation Summit consisted of a plenary session and two parallel conferences entitled (1) Synergy 2015: A Science and Technology Forum, run jointly by USAID STRIDE and Intellectual Property Office of the Philippines (IPOPHL) and (2) Toward an Innovation Economy: Building the Philippine Innovation Ecosystem, organized by NAST PHL with support from USAID STRIDE.

The second conference was organized by the Improving Science Technical Working Group created last October 27, 2014 during the 1st Philippine-United States of America Joint Science and Technology Committee Meeting (PH-US JCM).

The summit assessed the current status of science innovation in the country. It provided a venue for stakeholders, including industries and prospective members of the science human resource pool, to interact and help strengthen knowledge transfer and adaptation of strategies for the improvement of science innovation in the country. It identified ways to improve and further develop science innovation in the Philippines. Results of the conference will be used as basis in creating training materials and programs to help improve and pursue the science and technological innovation in the Philippines.

Recommendations. (1) the role of universities to conduct research should be deliberately linked to producing innovations in products and services, which is why it is important to make the university environment more conducive to technology transfer by updating policies, increasing exposure to IP, and investment portfolios. (2) In start-ups, it is important to have a connection with investors and to choose them carefully. (3) Failure is “encouraged” for start-ups, but having some sort of safety net through government programs or family support helps. (4) Provide grants and mentoring to help move new technologies from universities towards commercialization. (5) Important lessons in start-ups include having the right people, taking risks, giving small initial bets, building bridges to industry mentors and setting clear rules as to what is acceptable and not. (6) Establish an STE innovation ecosystem in the Philippines because it is the critical missing link that connects national investments in STE capacity building and innovation readiness into realizing economic growth and national competitiveness in the STE sector. (7) Boost the Life Science Business Process Management innovation cluster, build a medical research complex that would allow public-private-academic cooperation to spur innovation and where people would go to be treated. (8) Orchestrate a strategy to attract Contract Research Organizations to help build centralized laboratories here in the country. (9) Create a harmonized innovation plan or roadmap for the Life Science Business Process Management innovation cluster so that stakeholders can work together efficiently and productively. (10) Consider supporting Renewable Bioproducts (within which an Algae Bio-Innovation Global Hub could be established) as a next potential innovation cluster in the Philippine innovation ecosystem on account of its significant global economic impact.



The Honorable Philip S. Goldberg, U.S. Ambassador to the Philippines, giving the welcome remarks during the 2015 Philippine Innovation Summit.

Fourth National Climate Conference: Local Adaptation Actions with Mitigation Co-Benefits

Organized by the NAST Task Force on Climate Change, NAST PHL

Co-Organizers:

Philippine Atmospheric Geophysical Astronomical Sciences Administration (PAGASA)

Ecosystems Research and Development Bureau (ERDB)

National Economic and Development Authority (NEDA)

World Agroforestry Centre (ICRAF)

The Marine Science Institute-University of the Philippines Diliman

University of the Philippines Los Baños

Manila Observatory- Ateneo De Manila University

De La Salle Araneta University

OML Center, Philippines

September 23, 2015; Hotel Jen Manila

Focal Person: Acd. Rodel D. Lasco

The National Climate Conference is organized annually by NAST and its partner agencies to discuss the climate knowledge in the country and determine the gaps in climate-related research and policies. On its fourth year, the conference was anchored on the theme “Local Adaptation Actions with Mitigation Co-benefits.” It discussed, developed, and promoted synergistic options to mitigate and adapt to climate change.

Four technical sessions that dealt with topics such as, water, engineering, energy, social impact, food security, and ecosystem, were held in the afternoon, after the plenary session and opening of the poster session.

Best Scientific Poster Award

First Place

“Development of Risk Maps for Hazards Brought About by Monsoons” by Loren Joy D. Estrebillo, Ronald C. Macatangay, Tolentino B. Moya, Leoncio A. Amadore, and Gerry Bagtasa from the University of the Philippines Diliman

Second Place

“Preliminary Water Quality Assessment of Calumpang River in Batangas City, Philippines, Using Surface Water Analysis and UAV-Based Remote Sensing”

by Jose Mari C. Lit, Ma. Victoria O. Espaldon, Decibel F. Eslava, Ronald C. Macatangay, and Ronaldo B. Saludes from the University of the Philippines Los Baños



L-R: Dr. Lyne Morissette, founder and CEO, M-Expertise Marine; Dr. Srikantha Herath, senior academic programme officer, United Nations University; Acd. Rodel Lasco, Acd. Jaime Montoya, Dr. Ian Hutchison, director of operations, Aquatera; and National Scientist Lourdes Cruz during the ribbon cutting for the opening of poster and exhibit.

Recommendations:

1. Local communities play a major role in ocean conservation efforts, thus, any local adaptation and ocean conservation ideas should always match social norms and local industries.
2. Monitoring and strategic research are recommended to better understand potential interactions and to address the sustainable development of larger marine energy projects.
3. Collaborations and alliance between Hani and the Ifugao may be made to address climatic and social problems regarding the Banaue Rice Terraces, particularly issues regarding deforestation, worm infestation, ecological situation and shortage of young people to tend the farms. Social tourism and Muyong forests were suggested as possible additional sources of income to make the system sustainable. Social policies and political regulations and transdisciplinary approach are essential to address existing problems.

4. Filipinos should always look for growth opportunities even in climate and natural disasters.
5. Put in place organization and coordination to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances and ensure that all departments understand their role in disaster risk reduction and preparedness.
6. Assign a budget for disaster risk reduction and provide incentives for homeowners, low income families, communities, businesses and public sector to invest in reducing the risks they face.
7. Maintain up-to-date data on hazards and vulnerabilities, prepare risk assessments and use these as the basis for urban development plans and decisions. Ensure that this information and the plans for a city's resilience are readily available to the public and fully discussed with them.



Acd. Rodel Lasco and National Scientist Ricardo Lantican with the First Place Winner of the Best Scientific Poster Award, Loren Joy D. Estrebillon from the University of the Philippines Diliman.



Acd. Rodel Lasco discussed the results of the previous conferences through his presentation titled “Progress on Climate Research in the Philippines 2015: State of Knowledge from Series of Climate Conferences”.

38th Annual Scientific Meeting (Pre-ASM activities)

Focus Group Discussion on Past, Present, and Future of ICT Infrastructure in the Philippines

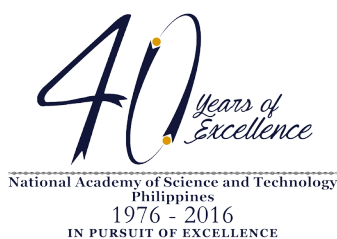
Organized by the Engineering Sciences and Technology Division (ESTD)

December 4, 2015; The Manila Hotel

Focal Persons: Acd. Jose B. Cruz Jr. and Acd. William T. Torres

In preparation for the 38th Annual Scientific Meeting, the ESTD organized this FGD to discuss the present status of ICT Infrastructure in the country and how it will enable the country and its people to achieve the national development goals.

Recommendations. After the discussion, the participants agreed that there is a need for an ICT infrastructure to mainstream the country's ICT development. They also suggested including an chapter on ICT in the Philippine Development Plan (PDP) which should contain infrastructure development, and the dynamics of supply and demand. The academe should look at priority sectors that should benefit from ICT, such as health, and help guide the engineers on infrastructure standards. Before creating an ICT department, a proposal to commission a study that will plan a national ICT was made. Finally, they all agreed on the need to revamp the regulatory provisions that are outdated. Much of regulation largely applies to plain old telephone service whereas what the country needs pertain to value-added data service.



LAUNCHING of the NAST 40th ANNIVERSARY

The National Academy of Science and Technology, Philippines (NAST PHL) will celebrate its 40th anniversary with the theme, “NAST: 40 Taon ng Kasaysayan at Kagalingan” (NAST: 40 Years of Making History in the Pursuit of Excellence) on December 17, 2016.

In celebration of its 40th anniversary, NAST will gather stakeholders, including policy makers, and NAST members, to present and promote its accomplishments since 1976, particularly in:

1. Recognizing outstanding achievements in science and technology;
2. Advising the President and the Cabinet on matters related to science and technology;
3. Promoting scientific productivity; and
4. Embarking on programs traditionally expected of an Academy of science.

The year 2016 marks the Academy's 40th Anniversary. In preparation for the said event, NAST PHL plans to hold activities that will highlight the efforts of the Academy in building a culture of science in the Philippine society:

Promotion of the NAST Awardees' Outstanding Contribution in Science and Technology

1. Logo Making Contest

The winning logo will be used in NAST letterheads and other collaterals until December 17, 2016.

2. Photo Exhibit at the Manila Hotel and at the Cultural Center of the Philippines (CCP)

The proposed photo exhibit will feature the National Scientists of NAST PHL and the National Artists of the National Commission for Culture and the Arts (NCCA) to highlight their contributions as the country's national treasures.

3. Commemorative Marker

A commemorative marker will be placed in a prominent place inside the DOST Compound which will list all the National Scientists, with space provision for future ones.

4. Audio Visual Presentation about NAST PHL

This will be shown during the 40th Anniversary Celebration, after which it will be distributed to the stakeholders of NAST for their information.

5. Lecture Series by National Scientists and Symposium for the Youth

To introduce NAST PHL and the living National Scientists to the youth, a lecture series in at least five (5) regions all over the country will be organized in partnership with DOST Regional Offices. The target audience for the Lecture Series will include the local government units (LGU) and speakers from the academe, especially the youth. An initial list will be determined depending on the expertise of the national scientists:

- ~ Agricultural Sciences Division — NS Ramon C. Barba, NS Ricardo M. Lantican, NS Dolores A. Ramirez
- ~ Biological Sciences Division — NS Angel C. Alcala, NS Edgardo D. Gomez, NS Gavino C. Trono Jr.
- ~ Health Sciences Division — NS Ernesto O. Domingo
- ~ Mathematical and Physical Sciences Division – NS Lourdes J. Cruz, NS Bienvenido O. Juliano, Bienvenido F. Nebres, S.J.
- ~ Social Sciences Division — NS Mercedes B. Concepcion, NS Gelia T. Castillo, NS Raul V. Fabella
- ~ Engineering Sciences and Technology Division

6. Tree Planting

41 indigenous trees, to be identified by National Scientist Edgardo D. Gomez, will be planted within the vicinity of the DOST Compound in honor of the 41 National Scientists. Families of deceased National Scientists will be invited to attend this event.

Gather all Stakeholders, including Policy Makers and National Artists, to Present and Promote NAST PHL and its Accomplishments since its Establishment in 1976

7. Dialogue of the National Scientists and National Artists

A gathering of the country's national treasures (National Scientists and National Artists) is proposed sometime in 2015 (December) and in 2016 (April, August, December).

8. Dialogue with the Senate and the House of Representatives

A dialogue between scientists and legislators, specifically members of the Senate and House of Representatives (HOR) Science and Technology Committee will be conducted to establish a working relationship that can bridge NAST PHL and policy making bodies to provide science-based advice on issues that are pertinent to the society. Possible topics for the discussion will be identified in agreement with parties involved.

9. US National Academy of Sciences (NAS) President as Keynote Speaker during the 38th Annual Scientific Meeting

US NAS President, Professor Ralph J. Cicerone will be invited to talk about their experiences as adviser to the US government on matters related to science and technology.

10. Webinar with the US National Academy of Engineering (NAE) and Institute of Medicine (IOM) and National Institutes of Health (NIH)

Members of the US NAE and US NIH will be invited for a webinar with its counterparts in the Philippines.

11. Future Science Leaders Forum

The workshop will be patterned after a similar activity conducted by the NAST Health Sciences Division titled Future Leaders Workshop. Attendees of these activities (one in 2015, and one in 2016) will serve as pool for future awardees.

12. International Seminar on The Role of Science and Academies in Sustainable Development

The International Workshop will be participated by member Academies of the AASSA. NAST plans to invite Professor Ralph J. Cicerone, president of the US National Academy of Sciences (NAS) and Dr. Mohamed Jamal Deen, president of the Academy of Science, Royal Society of Canada to discuss their respective experiences in the said topic.

Publish Books and other Materials

13. Publication of books about NAST PHL

A coffee table book that highlights the NAST PHL through the years.

- ~ A book about the life of the National Scientists in the Philippines
- ~ A book about "Defining the Contributions of the Academy Members"

14. Painting Competition

Interpretation of the NAST theme.

15. Meeting of all the Scientific Professional and Academic Societies

The meeting should focus on addressing the leading edges of research and development in the Philippines.

16. National Awards for Very Young Scientists

For practicing scientists, the real reward for science is the opportunity to contribute to the body of literature. The Award aims to:

- (1) promote scientific thinking and
- (2) promote careers in science

On 17 December 2015 at Manila Hotel, NAST PHL hosted the Lecture on the Philippine Innovation Ecosystem by DOST Secretary Montejo as one of the activities for the launching of the 40th NAST anniversary celebration.



Photos taken during the unveiling of the photo exhibit and NAST 40th Anniversary logo.

Ms. Samantha Tucay, winner of the logo making contest with National Scientist Mercedes B. Concepcion and Acd. William G. Padolina



The event started with the unveiling of the photo exhibit and the NAST 40th Anniversary logo led by Academician William G. Padolina, president of NAST PHL, and Ms. Luningning E. Samarita-Domingo, director of NAST. The awarding of the winner of the logo making contest. A press conference was held afterwards.

The press conference was followed by the invocation led by Academician Filemon A. Uriate Jr., member of the Engineering Sciences and Technology Division of NAST PHL. Acd. Padolina then welcomed everyone to the highlight of the launching ceremony which was the keynote message by Secretary Montejo.



Secretary Montejo gave a lecture on the Philippine Innovation Ecosystem entitled “Special Lecture on the Framework for STI-based Sustainable Development.” He talked about innovation for sustainable development and highlighted the important role of science and technology in the growth and development of the Philippines economy.

He cited the different DOST projects that made impact to the society, including Project NOAH to help address disaster mitigation and preparedness and the DOST Hybrid Electric Road Train, an urban mass transport system that can hopefully address the traffic problem in the metro. He talked about the Better Mining Project which can yield more output using a less costly process without using mercury and cyanide. Another example was the Carageenan Spray for use in agriculture. Finally, he mentioned the Food Innovation Center which housed locally developed Food Processing Equipment that empowers food scientists and entrepreneurs to develop food products that are of export quality. He ended his lecture by saying that the country should have the critical number of scientists, facilities, and program. Approaches should be multidisciplinary for more effective application innovations and we need the critical mass of scientists so that our innovation ecosystem would have a life on its own and attain sustainable development in the country.



(From L-R): Secretary Mario G. Montejo, Acad. William T. Torres, Acad. Gisela P. Concepcion, and Acad. William G. Padolina

Recommendations:

1. Project NOAH should be institutionalized and continuous maintenance and upgrading of facilities, support systems and sustained budget be assured.
2. The plight of the public utility drivers should be considered if the transportation system will be changed.
3. The government should invest in internet speed, especially for data gathering.
4. To improve research and development, budget for education should at least be 1% of the GDP.
5. Railroads should be built in the countryside to provide easier transportation of produce for farmers.



RESEARCH UPGRADING AND PERFORMANCE EVALUATION

The National Academy of Science and Technology, Philippines, through National Scientist Lourdes J. Cruz, initiated the project entitled “Evaluation and Improvement of the Research Publication and IP Productivity of the DOST R&D Institutes”, which was approved by the Department of Science and Technology (DOST). This project started in 2012 and for the past 4 years, several seminar workshops have been held in various parts of the country to build the capacity of scientists and researchers and assist them in writing proposals, preparing quality and highly competitive research papers for publication in scholarly journals.

During the Planning Meeting on January 23–24, 2015, the objectives of the project were revised to include research upgrading, research performance evaluation, and policy recommendation. The title was likewise revised to “Evaluation and Improvement of the Research Publication and Productivity of National R&D Systems”. Instead of focusing only on DOST R&D institutes, research in the whole country is now considered. Through this project, local researchers have been encouraged to publish their studies internationally, increase the publication rate, and consequently, the Global Competitive Index of the Philippines. The program also has trained new researchers on writing scientific papers, creating research proposals, and understanding research ethics and research management, using scientific mentoring as means for sustainable research, implementing research project and producing research outputs.



Acd. Eufemio T. Rasco Jr., giving a presentation on Scientific Mentoring.

In 2015, the group was able to conduct Regional Seminar Workshops on Research Upgrading and Performance Evaluation in eight different regions, namely, Region IV-A (Los Baños, Laguna), Region IV-B (Palawan),

Region I (La Union), Region XI (Davao), Region XIII (Butuan), Region X (Cagayan de Oro), Region VIII (Tacloban) and Region II (Tuguegarao).

Through this project, DOST and NAST PHL started giving incentives for internationally published researches in 2013. In 2014, granted patents and registered utility models of DOST technology generators were added to the scope of the awards.

The awarding ceremony for the 2015 DOST International Publication Award and DOST Granted Patent/Utility Model Award was held at the Manila Hotel on December 4, 2015. There were 25 recipients of the DOST International Publication Award, 1 recipient of Granted Patent Award, and 10 recipients of the Utility Model Registration Award. The Philippine Institute of Volcanology and Seismology (PHIVOLCS), and Philippine Astronomical and Geophysical Services Administration (PAGASA) received 3 international publication awards each. The Philippine Nuclear Research Institute (PNRI), Food and Nutrition Research Institute (FNRI), and Industrial Technology Development Institute (ITDI) got 8, 7, and 4 international publication awards, respectively.

For the Utility Model Registration Award, ITDI received 6 awards and the Metals Industry Research and Development Center (MIRDC), PNRI, FNRI, and Forest Products Research and Development Institute (FPRDI) received one award each.

The PNRI had the highest number of international publications and ITDI had the highest number of utility models. These agencies were also awarded as the best performing institutes.



Participants working on the scientific writing workshop

2015 DOST INTERNATIONAL PUBLICATION AWARDS

Philippine Institute of Volcanology and Seismology (PHIVOLCS)

1. **“Fault Distribution, Segmentation and Earthquake Generation Potential of the Philippine Fault in Eastern Mindanao, Philippines”** by Jeffrey S. Perez, Hiroki Tsutsumi, Mabelle T. Cahulogan, Desiderio P. Cabanlit, Ma. Isabel T. Abigania, Takashi Nakata
2. **“Developing Manga-style Tsunami Information Materials Based on the March 11, 2011 Great East Japan Earthquake”** by Ma. Mylene Martinez-Villegas, Renato U. Solidum, Jr, Lucille Rose Del Monte, John Paul Fallarme, Monique Realis, Melcario Pagtalunan, Eumelia Belo
3. **“Filipinos in Japan: Narratives of Experience from the March 11, 2011 Great East Japan Earthquake and Tsunami”** by Ma. Mylene Martinez-Villegas, Renato U. Solidum, Jr., Hiroshi Inoue, Hiroshi Imai, Angelito G. Lanuza, Henremagne C. Penarubia, Melcario Pagtalunan, Ma. Lynn P. Melosantos, Joan L. Cruz-Salcedo, Ishmael C. Narag, Melchor Lasala, Ma. Antonia V. Bornas, Perla J. Delos Reyes, Bartolome Bautista

Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

4. **“Long-term trends and variability of rainfall extremes in the Philippines”** by Marcelino Q. Villafuerte II, Jun Matsumoto, Ikumi Akasaka, Hiroshi G. Takahashi, Hisayuki Kubota, Thelma A. Cinco
5. **“Changes in extreme rainfall in the Philippines (1911–2010) linked to global mean temperature and ENSO”** by Marcelino Q. Villafuerte II, Jun Matsumoto, Hisayuki Kubota
6. **“Significant influences of global mean temperature and ENSO on extreme rainfall in Southeast Asia”** by Marcelino Q. Villafuerte II, Jun Matsumoto

Philippine Nuclear Research Institute (PNRI)

7. **“Intercomparison between NIOSH, IMPROVE A, and EUSAAR 2 protocols: Finding an optimal thermal-optical for Philippines OC/EC samples”** by Angel T. Bautista VII, Preciosa Corazon B. Pabroa, Flora L. Santos, Leni L. Quirit, Joannes Luke B. Asis, Marie Alexandra K. Dy, Jason Patrick G. Martinez
8. **“Food Habits and Distribution of the Taal Sea Snake (*Hydrophis semperi* Garman 1881) and the Sympatric Little File Snake (*Acrochordus granulatus***

Schneider 1799) in Lake Taal, Philippines” by Vhon Oliver S. Garcia, Rey Donne S. Papa, Jonathan Carlo A. Briones, Norman Mendoza, Noboru Okuda, Arvin C. Diesmos

9. **“Modification of microcrystalline cellulose by gamma-radiation-induced grafting”** by Jordan F. Madrid, Lucille V. Abad
10. **“Hemostatic potential of natural/synthetic polymer based hydrogels crosslinked by gamma radiation”** by Bin Jeremiah D. Barba, Charito T. Aranilla, Lucille V. Abad
11. **“Characterization and antioxidant properties of alcoholic extracts from gamma irradiated κ -carrageenan”** by Lorna Relve, Lucille Abad
12. **“Characterization of low molecular weight fragments of gamma irradiated κ -carrageenan used as plant growth promoter”** by Lucille V. Abad, Fernando B. Aurigue, Lorna S. Relve, Djowel Recto V. Montefalcon, Girlie Eunice Lopez
13. **“A Tyrosine-containing Analog of Mu-Conotoxin GIIIA as Ligand in the Receptor Binding Assay for Paralytic Shellfish Poisons”** by Aileen DL. Mendoza, Elvira Z. Sombrito, Lourdes J. Cruz
14. **“Energy Neutral Phosphate Fertilizer Production Using High Temperature Reactors - A Philippine Case Study”** by Nils Haneklaus, Rolando Y. Reyes, Wendy G. Lim, Estrellita U. Tabora, Botvinnik L. Palattao, Christina A. Petrache, Edmundo P. Vargas, Kazuhiko Kunitomi, Hirofumi Ohashi, Nariaki Sakaba, Hiroyuki Sato, Minoru Goto, Xing Yan, Tetsuo Nishihara, Harikrishnan Tulsidas, Frederik Reitsma, Sandor Tarjan, Karthikkeyan Sathrugnan, Radojko Jacimovic, Nahhar Al Khaledi, Brian K. Birky, Ewald Schnug

Food and Nutrition Research Institute (FNRI)

15. **“Chemical constituents of *Sechium edule* (Jacq.) Swartz”** by Consolacion Y. Ragasa, Kristine Biona, Chien-Chang Shen
16. **“Energy and Nutrient Intake and acceptability of nutritionally balanced school meals in Filipino students”** by Imelda Angeles-Agdeppa, Nicole Neufingerl, Clarita Magsadia, Harry Hiemstra, Chona Patalen, Ans Eilander
17. **“Relative Effect of Apparent Amylose Content on the Glycemic Index of Milled and Brown Rice”** by Trinidad P. Trinidad, Aida C. Mallillin, Rosario S. Sagum, Angelina dR. Felix, Arvin Paul P. Tuaño, Bienvenido O. Juliano

18. **“Chemical constituents of *Talinum triangulare*”** by Kristine Biona, Chien-Chang Shen, Consolacion Y. Ragasa
19. **“Beverage Consumption of Filipino Children and Adolescents (7th National Nutrition Survey): Nutritional Concerns and Potential Policy Implications”** by Maria Julia Goloso-Gubat, Edward Vincent J. Magtibay, Glen Melvin P. Gironella, Merlyn G. Tajan, Ma. Adrienne S. Constantino
20. **“Fortified Milk Consumption among 6-year old Children: Changes in Biochemical Markers of Trace Minerals and Vitamins”** by Trinidad P. Trinidad, Aida C. Mallillin, Rosario S. Sagum, Marco P. De Leon, Melissa S. Borlagdan, Amster Fei P. Baquiran
21. **“Improving Nutrition Knowledge, Attitude and Behavior of Selected Filipino Schoolchildren in the Healthy Kids Program”** by Julieta Dorado, Glenda Azana, Rowena Viajar, Mario Capanzana

Industrial Technology Development Institute (ITDI)

22. **“Characterization and Bioassay for Larvicidal Activity of *Anacardium occidentale* (Cashew) Shell Wastes Fractions against Dengue Vector *Aedes aegypti*”** by Rosalinda C. Torres, Alicia G. Garbo, Rikkamae Zinca Marie L. Walde
23. **“Larvicidal Activity of *Garcinia mangostana* Fruit Wastes Against Dengue Vector *Aedes aegypti*”** by Rosalinda C. Torres, Alicia G. Garbo, Rikkamae Zinca Marie L. Walde
24. **“Biomimetic Piezoelectric Quartz Crystal Sensor with Chloramphenicol-Imprinted Polymer Sensing Layer”** by Benilda S. Ebarvia, Isiah E. Ubando, Fortunato Sevilla III

2015 DOST INCENTIVE AWARDS FOR GRANTED PATENTS AND UTILITY MODEL REGISTRATION

PATENTS

Department of Science and Technology (DOST)

1. **“Remote Control Dimmable LED Lamp”** by Robert O. Dizon

UTILITY MODELS

Industrial Technology Development Institute (ITDI)

1. **“Process of Preparation of Natural Health Supplement from *Annona muricata* Fruits”** Teresita S. Bonifacio, Evelyn B. Manongsong, Elvira L. Arrogante, Romulo R. Estrella, Eduardo A. Lanto, Cynthia N. Ochona, Yolanda C. Paras, Juliet T. Barcala, Regin Glen Ortiz
2. **“Process of Preparation of Tea from *Annona muricata* Fruits”** by Rosalinda C. Torres, Carmelita O. Manalo, Teresita S. Bonifacio, Evelyn B. Manongsong, Elvira L. Arrogante, Romulo R. Estrella, Eduardo A. Lanto, Cynthia N. Ochona, Yolanda C. Paras, Juliet T. Barcala, Regin Glen Ortiz
3. **“Process of Preparation of Natural Health Supplement from *Annona muricata* leaves in Capsule”** by Rosalinda C. Torres, Carmelita O. Manalo
4. **“Process of Preparation of Tea from *Annona muricata* leaves”** by Rosalinda C. Torres, Carmelita O. Manalo, Teresita S. Bonifacio, Evelyn B. Manongsong, Elvira L. Arrogante, Romulo R. Estrella, Eduardo A. Lanto, Cynthia N. Ochona, Yolanda C. Paras, Juliet T. Barcala, Regin Glen Ortiz
5. **“Montmorillonite functionalized nanofibers for adsorption of organic molecules through electrospinning”** by Blessie A. Basilia, Ner Rodriguez

6. **“Process of producing Montmorillonite functionalized nanofibers for adsorption of organic molecules”** by Blessie A. Basilia, Ner Rodriguez

Metals Industry Research and Development Center (MIRDC)

7. **“Pandan Leaf Slitter”** by Allan John Sala Limson, Francisco C. Dime

Food and Nutrition Research Institute (FNRI)

9. **“Ready-to-Use-Fortified Supplementary/ Complementary Food Composition”** by Joyce R. Tobias, Trinidad II T. Arcangel, Charlie E. Adona, Abbie L. Padrones, Hannah C. Edangan, Mario V. Capanzana

Forest Products Research and Development Institute (FPRDI)

10. **“Digital Moisture Meter for Bamboo and Other Non-Timber Forest Products”** by Francisco C. Dime, Rommel G. Adame

Recommendations: The participants of the Regional Seminar Workshops on Research Upgrading and Performance Evaluation from different regions suggested that the procurement process for research should be improved. On the other hand, the awardees of the DOST International Publication and Granted Patent/ Utility Model Award suggested that the quality of the journals should also be included in the criteria and that papers published in journals with impact factor should be given greater incentive.

SCIENTIFIC LINKAGES *Function*

The Academy continuously explores and maintains linkages with foreign academies of science, technology, and engineering as well as with international and regional networks and local science organizations to promote close scientific cooperation.



These linkages aim to: (1) promote collaborative efforts among Filipino scientists, and between Filipino and foreign scientists; (2) promote and encourage scientific cooperation through its Scientist Exchange Visit Program under the memorandum of agreement between NAST PHL and a foreign science academy; (3) endorse participation in international conferences, meetings, fora, seminars, workshops, and similar scientific activities; and (4) publish and exchange scientific literature.



Through these scientific linkages, interested scientists may seek grants for scientific and technological undertakings, including fellowships, research grants, study visits, and grants for other collaborative projects from the academies associated with the National Academy of Science and Technology, Philippines.



Science Academies and Societies with Bilateral Agreement

- Academie des Sciences (French Academy of Sciences)
- Australian Academy of Science
- Chinese Academy of Sciences
- German Research Society (Deutsche Forschungsgemeinschaft)
- Indian National Science Academy
- Academy of Sciences Malaysia (ASM)
- Philippine-American Academy of Science and Engineering (PAASE)
- The Malaysian Scientific Association
- The Royal Society of London
- The Royal Swedish Academy of Sciences
- Turkish Academy of Science
- Korean Academy of Science and Technology



Affiliations to International Scientific Association/Organization

- American Association for the Advancement of Science (AAAS)
- Association of Academies and Societies of Sciences in Asia (AASSA)
- ASEAN Council of Academies and Engineering (ASEAN-CASE)
- InterAcademy Panel (IAP)
- InterAcademy Medical Panel (IAMP)
- InterAcademy Council (IAC)
- The World Academy of Sciences for the advancement of science in developing countries (TWAS)
- The World Network of Scientific Organizations (TWNSO)

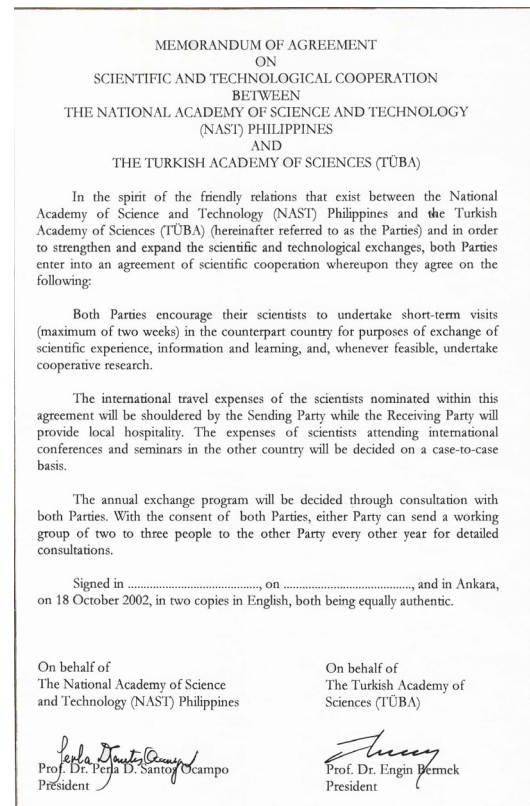
Other Linkages

- International Peace Foundation
- US Embassy
- Science and Technology Policy Research and Information Center, Taiwan
- Korea Science and Engineering Foundation (KOSEF)
- Committee on Science & Technology in Developing Countries (COSTED)
- Australian Embassy
- ASEAN-Science and Engineering Technology (ASEAN-SET)

ACTIVATION AND STRENGTHENING OF BILATERAL AGREEMENT

On January 14, 2015, Prof. Dr. Ahmet Cevat Acar, Turkish Academy of Sciences (TUBA) President, sent a letter to NAST President William G. Padolina and informed him of the practical changes they made regarding the implementation of the “Bilateral Exchange Program” in order to increase efficiency and mutual benefits.

TUBA, the National Academy of Sciences of Turkey and a member of the community of international scientific institutions, maintains bilateral relations with academies of sciences and multilateral relations with international academy organizations. These international relations are facilitated by framework agreements which specify the basic elements of scientific cooperation with respective science academies and implementation protocols under which the agreements are executed, to which, Bilateral Exchange Program between NAST PHL and TUBA is implemented on the basis of these agreement.



ATTENDANCE AT INTERNATIONAL CONFERENCES

ACADEMICIAN RAFAEL D. GUERRERO III

*AASSA-TUBA Regional Workshop on Sustainable Management of Food Security
Istanbul, Turkey on 9–10 April 2015*



Academician Guerrero presented a paper entitled “Sustainable Freshwater Aquaculture for Food Security of Rural Asia” at the regional workshop. The workshop was participated in by 30 participants from 13 countries in Asia and Africa and he was the only delegate from Southeast Asia.

The major observation arrived at during the workshop was that the sustainability of food security in the region is threatened by the growing population, limited freshwater resources, food safety and quality issues and climate change.

In his official travel report, Acd. Guerrero recommended that science-based and appropriate strategies/policy actions be implemented in the region particularly for resource-poor farmers in Asia who are vulnerable to climate change.

ACADEMICIAN ASUNCION K. RAYMUNDO

11th AASSA Regional Workshop Gender Issues in Science Research and Education in conjunction with the Gender Summit 6 Asia Pacific
26-29 August 2015 at the Plaza Hotel, Seoul, Republic of Korea



Academician Raymundo presented a paper titled “Retention and Success of Women Scientists: The Case of the University of the Philippines Los Baños”. She mentioned that in the Philippines, retention of women in science seems to be high; however, success indicators revealed that there might be some constraints for women to reach the “top” of

their science professions and for them to be on equal footing with their male counterparts.

Academician Raymundo recommended that there must be a conscious effort to encourage women scientists to go for higher positions, prestigious awards and for NAST to consider more women who are of course qualified, in its membership.

The recommendations agreed upon during the workshop were: (1) encourage/consider women in top leadership, in research grant funding and in various scholarships, (2) nominate more women for Academy membership, (3) foster networking of women scientists in the region, (4) create public awareness of gender gaps in science and technology, and (5) create a mentoring scheme for the younger female generation to encourage them to pursue a science career.



ACADEMICIAN JAIME C. MONTOYA

AASSA International Symposium on Global Health
Issues in Asia in conjunction with the AASSA Executive Board Meeting
19-21 October 2015 in Daejeon, Republic of Korea

Academician Montoya presented his paper entitled “Mechanisms for Regional Cooperation on Research and Innovation for Health in South East Asia” at the symposium. He reported that the ASEAN region is currently facing a number of challenges. Critical gaps have been identified in health research infrastructure and in research manpower and capacity to do relevant research. There is a need for more cooperation and collaboration among the ASEAN member states particularly in health research and innovation.



aassa
THE ASSOCIATION OF ACADEMIES
AND SOCIETIES OF SCIENCES IN
Asia

The Association of Academies and Societies of Sciences in Asia (AASSA) was launched in January 1, 2012 with 34 member academies and societies of science from 30 countries. AASSA resulted from the merger of the Association of Academies of Sciences in Asia (AASA) and the Federation of Asian Scientific Academies and Societies FASAS).

Through the merger, AASSA is expected to increase the visibility for science and increase efficiency, particularly in relation to resources (human and financial) with reduced overlap of activities and meetings, and provide a better platform for fundraising and interaction with other science organizations.

The inaugural general assembly of AASSA took place in Sri Lanka in October 2012. A new constitution for AASSA was formally sanctioned and election of new officers also took place. The first Executive Committee meeting was held in Manila on 23 October 2013 in conjunction with the International Symposium on Emerging Technologies for a Greener Earth. The principal objective of AASSA is to achieve a society in Asia and Australasia in which science and technology play a major role in the development of the region.

AASSA is a forum for scientists and technologists to discuss and provide advice on issues related to science and technology, research and development, and the application of technology for socio-economic development.

THOMAS EDISON E. DELA CRUZ, Ph.D.

IAP Young Scientists 2015

4-7 November 2015; Budapest, Hungary



Nominated by NAST PHL, Dr. Thomas Edison E. dela Cruz was one of the 50 young scientists from 30 countries who attended the 7th World Science Forum (WSF) held on 4-7 November 2015 in Budapest, Hungary and participated in the pre-conference workshop – Scoping the Future Views and Ideas of Young Scientists to Tackle Global Challenges. This workshop aims to involve

young scientists in global decision-making. The 7th WSF ended with the release of the Declaration that made a call for the improvement of quality of science education and for the empowerment of young scientists and women scientists in global decision-making.



ACADEMICIAN CARMENCITA D. PADILLA

*Member, Executive Committee,
InterAcademy Medical Panel
(IAMP)
IAMP Executive Committee
Meeting, April 28–30, London
UK and September 28–29,
New Delhi, India*

Academician Padilla attended and represented NAST PHL at the IAMP Executive Committee Meetings on 28–30 April 2015 in London, UK and on 28–29 September 2015 in New Delhi, India. As an active member of the IAMP Executive Committee, she continues her membership in two important committees: Strategic Planning Committee and the Membership Committee. The Strategic Planning Committee prepared the document harmonizing the framework for implementation of objectives of the IAMP. The Membership Committee actively looks for new country academy members.

BRYAN ALBERT LIM, M.D. IAMP Young Physician Leader (YPL) 2015

Bryan Albert Lim graduated from the University of the Philippines College of Medicine in 2010. He became the first Program Coordinator of the Asian Institute of Management Zuellig Center for Asian Business Transformation. He is a founding member of the Universal Health Care study group of the University of the Philippines.

He is currently finishing his residency in Internal Medicine at the Philippine General Hospital, at the same time, finishing his Masters in Development Economics at the University of the Philippines School of Economics. He is a fellow of Asia Society's 21 Young Leaders' Initiative as well as a founding member of the Global Shapers Manila Hub of the World Economic Forum.

He recently co-founded Health Sector Catalysts, a company which designs innovations that aim to provide solutions to health system issues. The group's first project, Pharmaceutical Transparency through Technology, was one of the winners of the Grand Challenges Canada — Stars in Global Health.



IAMP, a network of the world's medical academies and medical sections of academies of science and engineering, is committed to improving health world-wide.

ACADEMICIAN RUBEN L. VILLAREAL

*25th Anniversary of the Indonesian Academy of Sciences (AIPI)
and Workshop on Biosecurity
24–27 May 2015, Jakarta, Indonesia*



Academician Villareal attended the 25th Anniversary of the Indonesian Academy of Sciences (AIPI) and the Workshop on Biosecurity and participated in the meeting of the proposed Network of ASEAN Science Academies (NetASA) meeting. The meeting was attended by the Indonesian Academy of Sciences (AIPI), the National Academy of Science and Technology, Philippines (NAST

PHL), the Academy of Sciences Malaysia (ASM), and the Royal Netherlands Academy of Arts and Sciences. An earlier proposal to register the constitution of NetASA and its by-laws with ASEAN and work closely with the ASEAN secretariat which is based in Jakarta was reiterated during the meeting. With the ASEAN integration and as active member of both AASSA and IAP, Academician Villareal strongly recommended NAST to join NetASA and assign a focal person who will serve as its contact person.

He also strongly supported the recommended follow-through actions of Acad. Eufemio T. Rasco, Jr. regarding biosecurity. According to Acad. Rasco, "There is little awareness in the Philippines about biosecurity. NAST should be actively involved in improving the awareness and suggesting courses of action to protect the country from harm arising from international use of biological materials on humans, agriculture and the environment. Biological materials are cheap weapons, and in the hands of evil, they can cause irreversible harm. In many ways, these are more destructive than guns and other conventional weapons."



Akademi Ilmu Pengetahuan Indonesia

ACADEMY OF SCIENCES INDONESIA (AIPI)

Indonesian Academy of Sciences, which was established by Act of the Republic of Indonesia (8/1990), as an independent institution: (-) Giving opinions, suggestions, and consideration of matters relating to science and technology knowledge to the Government and the community, (-) Encourage the development of science knowledge and excellence through conference scientific and policy discussion forums, publications, as well as national and international relations.

ACADEMICIAN EUFEMIO T. RASCO JR.

Meeting of States Parties (MSP)

Geneva, Switzerland, 13–14 December 2015



Academician Rasco participated and represented NAST PHL in the Meeting of States Parties (MSP) in Geneva, Switzerland on 13–14 December 2015. This will be the last meeting before the 8th Review Conference of the Biological and Toxin Weapons Convention (BTWC) scheduled in December 2016. The MSP is a follow up meeting of the Workshop on Biosecurity held on

19–28 August 2014 in Bogor, Indonesia in which NAST PHL was also represented by Academician Rasco.

According to Acad. Rasco and from the point of view of NAST PHL, it is important that participation in these meetings is sustained, so that we can help develop a national policy related to biological weapons and toxins. While we do not have an existing effort to develop these weapons, it is important that safeguards are made to prevent dual use research (those whose results can be used for peaceful and war purposes) from going out of hand. A code of conduct for researchers has been developed by Indonesia for this purpose and it can be used as a basis for developing our own.

ASEAN PLUS THREE (ASEAN+3) YOUNG SCIENTIST EXCHANGE PROGRAM

At the request of DOST Undersecretary Amelia P. Guevara, five high-level young scientists under the age of 45 were nominated to the ASEAN+3 Young Scientist Exchange Program, Beijing, People's Republic of China (PROC) on 19–23 October, based on their expertise, age and the capacity of the institutions that they are affiliated with to support their travel:

- REGINA C. SO, OYS 2011 (age 39) – Organic Chemistry
- MELITO A. BACCAY, OYS 2009 (age 43) – Dr. of Engineering
- MARCOS B. VALDEZ Jr., OYS 2012 (age 37) – Animal Genetics

The exchange program aims to provide a platform to strengthen communication among young scientists from ASEAN+3 countries and further enhance their career development in the region. The Ministry of Science and Technology (MOST) of PROC will provide for the accommodation, meals and airport transfers of qualified participants while the sending agency will cover the international airfare.

The Exchange Program has been postponed indefinitely. The nominated young scientists will be informed of the new schedule.

INTERNATIONAL STATEMENTS SUPPORTED by NAST PHL

“A CALL FOR ACTION TO STRENGTHEN HEALTHCARE FOR HEARING LOSS” an IAMP Statement, February 2015

Hearing loss is a major health issue that continues to receive inadequate attention in many countries. More than 360 million people worldwide suffer from hearing loss, which is strongly linked to cognitive and functional disability in both children and adults.

IAMP strongly supports the conclusions derived from previous work by academies and others to establish the global impact and challenges of hearing loss, including the need for research and services, especially development work on low-cost model services. It is clear that there is need for an integrated strategy of effective and efficient activities worldwide to improve the lives of people with hearing loss.

The Academy, through its President, Academician William G. Padolina endorsed the statement and anticipated its release in time for the International Ear Care Day.

AASSA STATEMENT ON EARTHQUAKE DISASTER IN NEPAL

May 2015

On April 25, 2015, the 7.8 magnitude disastrous earthquake hit Nepal and its neighboring countries, specifically, India and China, and caused the death of around 7,000 people. In sympathy with the Nepal Academy of Science and Technology, the AASSA Executive Board issued a statement on this unfortunate disaster signed by all the Presidents of its members. NAST President William G. Padolina supported and signed the AASSA Statement on Earthquake Disaster in Nepal. The signed statement was forwarded to the NAST members for their information.

Disastrous Earthquake in Nepal and the Neighboring Countries

The disastrous earthquake of magnitude 7.8 with epi-centre at east-southeast of Lamjung, Nepal has led to a great loss of life, property and infrastructure in Nepal and neighbouring countries including India, China and Bangladesh. The earthquake had triggered an avalanche at Mt. Everest leading to the death of at least 19 mountaineers. It is a natural calamity of great magnitude with more than 6,300 deaths reported so far. It is feared that the death toll may reach 10,000 or even more. The heavily damaged buildings included several centuries old monuments at UNESCO World Heritage sites at the Kathmandu Darbar Square, the Patan Darbar Square and the Bhaktapur Durbar Square. These were of great cultural and historic importance. The UN Agencies and individual countries, particularly those in the immediate neighbourhood like India, China, Pakistan and others are actively involved in rescue operations and supporting affected population through food, shelters, transportation and medical facilities. Rebuilding of damaged educational institutions: schools, colleges and universities and R&D institutions will take a lot of resources, as well as expert inputs. At the same time these educational and S&T bodies are key vehicles of nation building, particularly after this disaster.

The Association of Academies and Societies of Sciences in Asia (AASSA) expresses deep grief and conveys solidarity, sympathy and best wishes to the people and leadership of Nepal and all affected countries of the region. AASSA particularly wishes to convey that the scientific community in the Asia-Pacific as well as at the global level through organizations like IAP and ICSU is deeply concerned about the consequences about this calamity.

The Association of Academies and Societies of Sciences in Asia appeals to international bodies of science like InterAcademy Partnership (IAP) and the International Council for Science (ICSU) for providing all possible assistance to rebuild the educational institutions and research bodies engaged in S&T. The Nepalese R&D establishment needs to be assisted and helped to evolve efficient strategies for recovery from the disaster. We appeal to major agencies like UNESCO, World Bank and Asian Development to provide all possible financial support. The academies and societies, being apex bodies of scientists and engineers volunteer to provide subject experts in the areas of relevance.

Professor Soraya Popal
Academy of Sciences of Afghanistan

Professor Andrew Holmes
Australian Academy of Science

Professor Mesbahuddin Ahmad
Bangladesh Academy of Sciences

Professor Chunli Bai
Chinese Academy of Sciences

Professor Giorgi Kvesitadze
Georgian National Academy of Sciences

Professor Raghavendra Gadagkar
Indian National Science Academy

Professor Ruth Arnon
Israel Academy of Sciences and Humanities

Professor Takashi Onishi
Science Council of Japan

Professor Sung Hyun Park
Korean Academy of Science and Technology

Professor Sook Il Kwun
National Academy of Science, Republic of Korea

Professor Abdygary Erkebaev
National Academy of Sciences of the Kyrgyz Republic

Tan Sri Datuk Dr Ahmad Tajuddin Ali
Academy of Sciences Malaysia

Professor Batbold Enkhtuvshin
Mongolian Academy of Sciences

Dr. William G. Padolina
National Academy of Science and
Technology, Philippines

Professor Anwar Nasim
Pakistan Academy of Science

Professor Valentin Sergienko
Far Eastern Branch of the Russian
Academy of Sciences

Professor Aleksandr Aseev
Siberian Branch of the Russian Academy
of Sciences

Professor Andrew Wee
Singapore National Academy of Science

Professor Vijaya Kumar
National Academy of Sciences of Sri Lanka

Associate Professor Sakarindr Bhumiratana
Thai Academy of Science and Technology

Professor Ahmet Cevat Acar
Turkish Academy of Sciences

Professor Krishan Lal
The Association of Academies and Societies of Sciences in Asia

NAST “ON THE GO” FOR GAD

For 2015, the GAD activities that were participated in and conducted by NAST were:

Women’s Month Celebration with the theme “Juana, Desisyon Mo ay Mahalaga Sa Kinabukasan ng Bawat Isa, Ikaw Na!” at the Quezon City Circle, Quezon City, 08 March 2015

As mandated by RA 6949 and spearheaded by the Philippine Commission on Women, NAST PHL with the DOST family celebrated and participated in the 2015 Women’s Month Celebration on 08 March 2015 with the theme, “Juana, Desisyon Mo ay Mahalaga Sa Kinabukasan ng Bawat Isa, Ikaw Na!” The celebration pays tribute to all women leaders who passionately led and continue to advance women’s advocacies and highlights their key roles and accomplishments in leadership, power and decision-making.



DOST-wide Women’s Month Celebration, 16 March 2015 at DOST Compound

The NAST Secretariat joined the DOST-wide Women’s Month Celebration at DOST on 16 March 2015. NAST with the Science Education Institute was in charge of coordinating the Parade around the DOST Compound with poster and agency statement, as well as the invitation of the Taguig Elementary School’s drum and bugle band who led the parade.

Selected NAST staff performed the agency statement presentation — “**Juana kasama ka! Isulong mo ang Siyensya at Teknolohiya, Desisyon at boses mo ay may halaga!**”



NAST Staff at the parade during the DOST-wide Women’s Month Celebration

*18-Day Campaign to End Violence Against Women (VAW)
25 November to 12 December 2015*

NAST PHL declared its strong support to the 18-Day campaign to End Violence against Women by joining the “Orange Your Icon for 18-Days” (25 November to 12 December 2015) and by attending the “Assembly of Anti-VAW Advocacy Supporters” on 25 November at the Aliw Theater, Pasay City.

NAST aims to raise the awareness and consciousness of wider audience in taking action on VAW as a public issue. NAST PHL was the only agency at the DOST Compound in Bicutan that participated in this initiative. Through this, the Academy, supports the anti-VAW advocacy and brings the message of zero-tolerance for VAW to the public’s attention.



ORANGE YOUR ICON at NAST PHL

Add-On Knowledge Session on RA 9710 and W-EDGE 16 November 2015, NAST Office

To satisfy the approved GAD Plan and Budget of NAST for 2015, the “Add-On Knowledge on RA 7710 “Magna Carta of Women (MCW)” and “Women Empowerment and Development towards Gender Equality (W-EDGE)” was conducted. It aimed to strengthen and increase the awareness level of the NAST employees on the MCW and W-EDGE. Ms. Maria Fe B. Singson, Program Manager, DOST-wide GAD was the resource speaker.

Republic Act 9107 Magna Carta of Women

The MCW is a comprehensive women's human rights law that seeks to eliminate discrimination through the recognition, protection, fulfillment and promotion of the rights of Filipino women, especially those belonging in the marginalized sectors of the society. It conveys a framework of rights for women based directly on international law.

The MCW mandates all government offices, including government-owned and controlled corporations and local government units to adopt gender mainstreaming as a strategy for implementing the law and attaining its objectives. It also mandates (a) planning, budgeting, monitoring and evaluation for gender and development, (b) the creation and/or strengthening of gender and development focal points, and (c) the generation and maintenance of gender statistics and sex-disaggregated databases to aid in planning, programming and policy formulation.

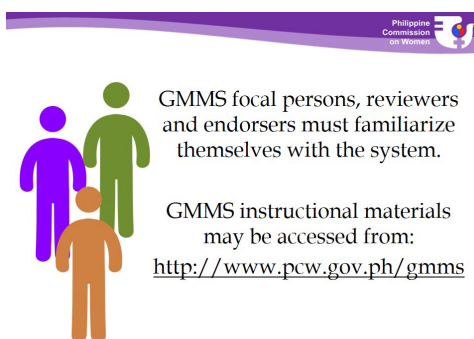
Women's Economic Empowerment

The Magna Carta of Women (MCW) moves for the empowerment of women in all spheres of development. It seeks to eliminate discrimination through the recognition, protection, fulfillment and promotion of the rights of Filipino women, especially those belonging in the marginalized sectors of the society that include the poor. The MCW promotes gender equality which plays a pivotal role in the fight against poverty. Through its provisions, the MCW levels up the playing field by making productive resources and economic opportunities equally available for both men and women.

Generally, women do not control family properties and decision-making rights on the use of income, further limiting opportunities to break the poverty cycle. Women's economic empowerment through the MCW is deemed crucial in putting a halt to this scenario. The fight against poverty can be won when women are capacitated to generate income for themselves and their families are provided with equal access to resources in doing so.

4th GAD Budget Forum and Preparation of GAD Plan for 2017, 04 November 2015 at the Occupational Safety and Health Center Auditorium, Agham Road, Quezon City

The Philippine Commission on Women (PCW) conducted the GAD Planning and Budgeting Forum for National Government Agencies (NGAs), Attached Offices, Bureaus and Government-Owned and Controlled Corporations (GOCCs) and discussed the Guidelines for the Preparation of Annual Gender and Development (GAD) Plans and Budgets and Accomplishment Reports to Implement the Magna Carta of Women (PCW-DBM-NEDA Joint Circular 2012-01).



The participants were re-orientated on the GAD Plan and Budget (GPB) submission through Gender Mainstreaming Monitoring System (GMMS), a web-based information system that profiles the gender mainstreaming efforts of the agencies, GOCCs, SUCs and other government instrumentalities. It includes a module for automating the GAD plan and accomplishment report submission as well as an online version of the Gender Mainstreaming Evaluation Framework (GMEF) tools.

The status of submission and review and endorsement of 2016 GAD Plan and Budget and 2014 GAD Accomplishment Report (AR) were presented. Out of the 19 DOST agencies and 13 regional offices, only NAST PHL and DOST Region IX obtained an endorsed status from PCW on the submission of the 2016 GPB and 2014 GAD AR.

NAST LIBRARY

NAST PHL is maintaining its status as an online specialized library in-sync with the Philippine e-Lib and the DOST union catalogue. Digitization of all its publications available at the NAST Library is continuously done. E-files of the publications are now searchable from the DOST union catalogue through the site: www.scinet.dost.gov.ph/.

Physical copies of the materials and publications are available on file, i.e., books, monographs, selected scientific papers and letters of most of the members.



OUTSTANDING YOUNG SCIENTISTS, INC. (OYSI)

Philippine Academy of Young Scientists

The Outstanding Young Scientists, Inc. (OYSI), also known as the *Philippine Academy of Young Scientists*, is a collegial group of scientists who were recipients of the Outstanding Young Scientist Awards of the National Academy of Science and Technology, Philippines (NAST PHL).

The OYSI Training Workshop Project

In 2015, the OYSI project “Training Workshops for Writing Proposals and Logical Frameworks for Developing Science Culture in the Region” was absorbed by NAST PHL under the research performance evaluation project. With this move, the funding for the conduct of this workshop in the region was assured. The two-day training workshop aims to build and enhance the capability of young researchers from state colleges and universities in preparing and presenting good quality and competitive research proposals.

Workshops were held at Mindanao State University-Iligan Institute of Technology, Iligan City, Lanao del Norte on April 23–24, 2015; Nueva Vizcaya State University, Bayombong, Nueva Vizcaya for Cagayan Valley Region (Region II) on July 29–30, 2015; Grand Regal Hotel, Davao City (Region IX) on August 19–20, 2015; Visayas State University, Baybay City, Leyte for Eastern Visayas Region (Region VIII) October 1–2, 2015; and Palawan State University, Puerto Princesa, Palawan for Mimaropa Region (Region IV-B) on December 9–10, 2015.

Participation in DOST Region II “Career Guidance and Leadership Training for the Youth”

In connection with the visit of Secretary Mario G. Montejo to Region II, the Department of Science and Technology Region II scheduled a “Career Guidance and Leadership Training for the Youth” on March 25, 2015. Dr. Maribel L. Dionisio-Sese, and Dr. Mudjekeewis D. Santos served as the resource speakers for 300 students on ‘What Makes a Leader’ and ‘The Mindset for Success’ at the Isabela State University Gymnasium, Cauayan, Isabela.

(L-R): Dr. Windell L. Rivera, Acd. Jaime C. Montoya, Dr. Maribel L. Dionisio-Sese, Acd. William G. Padolina, and Dr. Felino P. Lansigan

10th OYSI Annual Meeting and Scientific Convention

The OYSI conducted its 10th Annual Meeting and Scientific Convention on July 7, 2015 at The Manila Hotel, One Rizal Park, Manila with the theme “*Health Issues in the Digital Age*”. Dr. Jaime C. Montoya, Executive Director of Philippine Council for Health Research and Development, was invited as the keynote speaker. Invited plenary speakers were Ateneo de Manila University Professor Queena N. Lee-Chua (Growing Up Wired: Survey of Media Behavior of Filipino Teens), UP Manila Clinical Professor Edsel Maurice T. Salvaña (The Molecular Epidemiology of HIV in the Philippines: Implications of the Rapidly Expanding Epidemic), UP Manila Professor and NAST Academician Antonio Miguel N. Dans (Health Information Services—How to Sift the Sand for Gold), UP Manila Technology Transfer and Business Development Office Director and National eHealth Program Management Office Team Leader Alvin B. Marcelo (The Philippine Health Information Exchange - A Platform for Collaborative Health Research), and UP Los Baños Professor Merlyn S. Mendioro (Biotechnology: Designing Crops for the Digital Age).

Seven new members were inducted during the annual meeting. They were:

Aimee Lynn Barrion-Dupo, Ph.D. (Entomology)
Clarissa David, Ph.D. (Communication)
Allan Patrick G. Macabeo, Dr.rer.nat. (Chemistry)
Joey D. Ocon, Ph.D. (Environmental Science and Engg)
Enrico C. Paringit, D. Engineering (Geodetic)
Rex Ferdinand M. Traifalgar, Ph.D. (Fisheries Science)
Dennis V. Umali, DVM, Ph.D. (Veterinary Science)



PHILIPPINE SCIENCE HERITAGE CENTER (PSHC) *Salinlahi*

The Philippine Science Heritage Center (PSHC) or *Salinlahi* (meaning heirloom of a generation), under the management of the National Academy of Science and Technology, Philippines, serves as the main repository of the significant contributions and achievements of Filipinos in the world of science.



Committed to bringing world-class services and to facilitate science learning in a fun and exciting way, the PSHC, through the project "*Salinlahi* in Transition: Transforming the PSHC into World-Class Science Center," aimed at increasing engagement among its visitors through the installation of new interactive exhibits. Moreover, it also supports the Center's mission to raise awareness of the public about Philippine science and technology and the different opportunities S&T can offer.



Enriching the Visitors' Experience at the Center

In celebration of DOST's National Science and Technology Week, five new interactive and digital exhibits were inaugurated at the Philippine Science Heritage Center on July 27, 2015. These were the National Scientists Browser (2 units), Be a Biologist (2 units), Who's Who In Philippine Science (1 unit), Play DNA (1 unit), and the Cutting Edge Research in Biotechnology in the Philippines (1 unit). Present during the inauguration were NAST President Acd. William G. Padolina, DOST Assistant Secretary Oswald C. Santos, and other NAST Academicians and DOST Officials.

As PSHC evolves into a modern science center, the exhibits at the Bioteknolohiya gallery were updated and refurbished. Further, a number of interactive exhibits are being developed and are expected to be installed in the first quarter of 2016.



Some of the new exhibits at the PSHC were viewed and tried out by the visitors during the inauguration.

Promoting an S&T Culture

Championing a scientific culture in the Philippines, PSHC, being an alternative learning institution, holds symposia, fora, seminars, and meeting with scientists, among others, in and outside the Center.

MEET YOUR SCIENTISTS

To inspire the younger generations to consider a scientific career, PSHC invites scientists to share their experiences in their chosen field. The Center held seven Meet Your Scientists program this year. The participating schools were the following: Signal Village High School (January 29), Kalayaan National High School (February 27), Upper Bicutan National High School (June 25), Assumption Antipolo (August 26), and Parañaque Science High School (August 27). The program was brought to the following schools: Raises Academy, Angono, Rizal (February 6) and UP Rural High School (October 20).



Dr. Michael Angelo Promentilla, OYS 2013 sharing his story on being a young scientist.

SALINLAHI GURO NG SIYENSYA

Acknowledging the vital role science teachers play in stimulating the interest of students in science and technology, PSHC conducted its "Salinlahi Guro ng Siyensya," that will equip science teachers with the latest trends and information about different science-related matters such as biotechnology, science communication, and innovative ways to teach science.

This year, the activity with the theme "Salinlahi Guro ng Siyensya: An Innovative Way of Teaching Science" was conducted on May 7 at the Philippine Science Heritage Center. NAST Academician Christopher Bernido and his wife, Dr. Maria Victoria Carpio-Bernido, were the resource speakers of said event.

Academician Christopher C. Bernido (top) and Dr. Ma. Victoria Carpio-Bernido (bottom) share their knowledge and experiences with the science teachers present during the event.



SALINLAHI SYMPOSIUM SERIES

To bring science closer to the public, especially in areas not usually reached by science symposia, PSHC's *Salinlahi* Symposium Series is conducted in three provinces every year. This program encourages students to participate in a scholarly discussion with renowned scientists about timely science-related issues.

With the theme "The Role of Science in the Sustainable Development of the Environment," the program was brought to Basco, Batanes with Dr. Mudjikeewis Santos, Engr. Glenn Banaguas, and Dr. Juan Carlos Gonzalez in January; in Guimaras, Iloilo with National Scientist Angel Alcala, Dr. Marcos Valdez Jr., and Prof. Victoria Villegas in October; and in General Santos with Ms. Ruby Cristobal, Ms. Alma Canama, Dr. Dennis Umali, and Academician Rafael Guerrero III in November.



Prof. Victoria Villegas and Dr. Marcos Valdez Jr. with the students from Guimaras, Iloilo.

OPEN HOUSE

In celebration of the National Science and Technology Week (NSTW), the Center opened its premises to the public for free from July 27 to 30. Aside from the launch of its new interactive exhibits, PSHC also conducted a number of activities during the week long Open House. These were: Meet Your Scientists: Be the Next Men and Women of Science, which was attended by about 400 students and teachers from Metro Manila and Calabarzon; Tour Operator's Gathering, and Taguig Handa sa Yanig, a disaster risk reduction management seminar for DOST employees.



ADVANCING WITH TECHNOLOGY

Realizing that technology brings changes to society, PSHC launched its game development competition for young Filipinos in 2014. Entitled *Salinlahi* Evolution, the program received 15 entries from all over the country. From the 15 entries, the top five were chosen by the Center's Working Committee.

The top five entries were presented and judged in a game development conference on December 3 at the PSHC. The game "Tuklas" from Team Happy of i-Academy was declared as the grand winner of the competition. The panel of judges was composed of Mr. Liandro Antonio Tabora of Owlery e-Learning Solutions, Prof. Roel Cantada of UP Open University, Mr. Gaius Karl Noble of the Science Education Institute, and NAST Outstanding Young Scientist, Dr. Jaderick Pabico of the University of the Philippines Los Baños.



Team Happy of i-Academy won the first Salinlahi Evolution with their game "Tuklas."

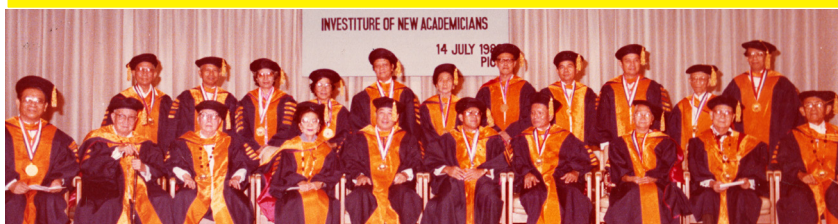
OTHER ACTIVITIES

Aside from the above-mentioned activities, PSHC also actively participated in the different initiatives of DOST agencies such as the Science Education Institute's Science Film Festival held on October 21, SIKAT's Book Reading Activity on November 27, and DOST-NCR's Science Nation Tour on December 9-11. The Center also organized a jungle-themed party for the children of DOST Day Care on November 11 as part of the National Children's Month celebration.



THE MEMBERS of the ACADEMY

Since 1978, a total of 114 Academicians have been elected, 41 of whom have been conferred the National Scientists rank and title. Presently, NAST has 68 members with 16 National Scientists. They come from different fields of disciplinary specialization, a few related to each other, but their body of work is very distinctive for each member. The Academy has six divisions: Agricultural Sciences, Biological Sciences, Mathematical and Physical Sciences, Engineering Sciences and Technology, Health Sciences, and Social Sciences.



NAST DIVISIONS

The National Academy of Science and Technology, Philippines (NAST PHL) is composed of members called **ACADEMICIANS**. The general membership is the policy making body of the Academy.

An Academician belongs to one of the following divisions of the Academy:

- I. AGRICULTURAL SCIENCES DIVISION*
- II. BIOLOGICAL SCIENCES DIVISION*
- III. ENGINEERING SCIENCES AND TECHNOLOGY DIVISION*
- IV. MATHEMATICAL AND PHYSICAL SCIENCES DIVISION*
- V. HEALTH SCIENCES DIVISION*
- VI. SOCIAL SCIENCES DIVISION*

The general administration and direction of the affairs of the Academy are vested in an Executive Council of seven members appointed by the President of the Republic of the Philippines for a term of three years.

A Director heads the NAST Secretariat which implements the decisions of the Executive Council, and attends to the day-to-day affairs of the Academy. The Secretariat consists of two divisions: Technical Services Division and Finance and Administrative Division.

The Academy is an attached agency of the Department of Science and Technology and serves as an advisory agency to the department.

AGRICULTURAL SCIENCES DIVISION



ACADEMICIAN
RUBEN L. VILLAREAL
Division Chair



NATIONAL SCIENTIST
RAMON C. BARBA



NATIONAL SCIENTIST
RICARDO M. LANTICAN



NATIONAL SCIENTIST
DOLORES A. RAMIREZ



NATIONAL SCIENTIST
TEODULO M. TOPACIO JR.



NATIONAL SCIENTIST
BENITO S. VERGARA



ACADEMICIAN
LIBERTADO C. CRUZ



ACADEMICIAN
ROMULO G. DAVIDE



ACADEMICIAN
RAFAEL D. GUERRERO III



ACADEMICIAN
RODEL D. LASCO



ACADEMICIAN
CEFERINO P. MAALA



CORRESPONDING MEMBER
LIWAYWAY M. ENGLE



ACADEMICIAN
EUFEMIO T. RASCO JR.



CORRESPONDING MEMBER
REYNALDO L. VILLAREAL

BIOLOGICAL SCIENCES DIVISION



NATIONAL SCIENTIST
ANGEL C. ALCALA
Division Chair



NATIONAL SCIENTIST
CLARE R. BALTAZAR



NATIONAL SCIENTIST
EDGARDO D. GOMEZ



NATIONAL SCIENTIST
GAVINO C. TRONO JR.



ACADEMICIAN
PORFIRIO M.. ALIÑO



ACADEMICIAN
RHODORA V. AZANZA



ACADEMICIAN
FILOMENA F. CAMPOS



ACADEMICIAN
VERONICA F. CHAN



ACADEMICIAN
GISELA P. CONCEPCION



ACADEMICIAN
SALCEDO L.. EDUARDO



ACADEMICIAN
EMIL Q. JAVIER



CORRESPONDING MEMBER
MANUEL M. GARCIA



ACADEMICIAN
JURGENNE H. PRIMAVERA



ACADEMICIAN
ASUNCION K. RAYMUNDO

ENGINEERING SCIENCES and TECHNOLOGY DIVISION



ACADEMICIAN
REYNALDO B. VEA
Division Chair



ACADEMICIAN
ESTRELLA F. ALABASTRO



ACADEMICIAN
ELIEZER A. ALBACEA



ACADEMICIAN
JOSE B. CRUZ JR.



ACADEMICIAN
ALVIN B. CULABA



ACADEMICIAN
ANGEL L. LAZARO III



ACADEMICIAN
LEONARDO Q. LIONGSON



ACADEMICIAN
AURA C. MATIAS



ACADEMICIAN
GUILLELRMO Q. TABIOS III



ACADEMICIAN
WILLIAM T. TORRES



ACADEMICIAN
FILEMON A. URIARTE JR.

MATHEMATICAL and PHYSICAL SCIENCES DIVISION



ACADEMICIAN
EVELYN MAE TECSON-MENDOZA
Division Chair



NATIONAL SCIENTIST
LOURDES J. CRUZ



NATIONAL SCIENTIST
BIENVENIDO O. JULIANO



NATIONAL SCIENTIST
BIENVENIDO F. NEBRES, SJ.



CORRESPONDING MEMBER
ALFONSO M. ALBANO



ACADEMICIAN
JOSE MARIA P. BALMACEDA



ACADEMICIAN
CHRISTOPHER C. BERNIDO



ACADEMICIAN
FABIAN M. DAYRIT



ACADEMICIAN
ERNESTO J. DEL ROSARIO



ACADEMICIAN
JOSE O. JULIANO



CORRESPONDING MEMBER
EDUARDO R. MENDOZA



ACADEMICIAN
MARCO NEMESIO E. MONTAÑA



CORRESPONDING MEMBER
AMADOR C. MURIEL



ACADEMICIAN
APOLINARIO D. NAZAREA



CORRESPONDING MEMBER
BALDOMERO M. OLIVERA



ACADEMICIAN
WILLIAM G. PADOLINA



CORRESPONDING MEMBER
EDUARDO A. PADLAN



CORRESPONDING MEMBER
KELVIN S. RODOLFO



ACADEMICIAN
CAESAR A. SALOMA



ACADEMICIAN
FORTUNATO B. SEVILLA III



ACADEMICIAN
FERNANDO P. SIRINGAN

HEALTH SCIENCES DIVISION



ACADEMICIAN
JAIME C. MONTOYA
Division Chair



NATIONAL SCIENTIST
ERNESTO O. DOMINGO



ACADEMICIAN
RAMON F. ABARQUEZ JR.



ACADEMICIAN
ANTONIO MIGUEL L. DANS



ACADEMICIAN
QUINTIN L. KINTANAR



ACADEMICIAN
REMIGIO M. OLVEDA



ACADEMICIAN
CARMENCITA D. PADILLA



ACADEMICIAN
THELMA E. TUPASI



ACADEMICIAN
EDWARD H.M. WANG

SOCIAL SCIENCES DIVISION



NATIONAL SCIENTIST
MERCEDES B. CONCEPCION
Division Chair



NATIONAL SCIENTIST
GELIA T. CASTILLO



NATIONAL SCIENTIST
RAUL V. FABELLA



ACADEMICIAN
ARSENIO M. BALISACAN



ACADEMICIAN
ALLAN B.I. BERNADO



ACADEMICIAN
AGNES C. ROLA



ACADEMICIAN
MICHAEL L. TAN

ACCOMPLISHMENT REPORTS OF THE MEMBERS

Academician RAMON F. ABARQUEZ JR.

Significant positions

- Philippine General Hospital- Head Service I, Department of Medicine
- Professor Emeritus, College of Medicine, UP Manila
- Member, Screening Committee for the Nomination of Professor Emeritus, UP Manila
- Member, Peer Review Board, Philippine Heart Center
- Member, Continuing Professional Development Council, Board of Medicine, Professional Regulation Commission
- Chair, Continuing Medical Education Commission, Philippine Medical Association
- American College of Cardiology (Emeritus Fellow)

Publications

- Ramon F. Abarquez, Jr. Lessons from Mamasapano, Philippine Inquirer , Opinion, 2015; Feb 11.
- Abarquez, Ramon Jr. Medical Research still Searching, Vital Signs January 1-31, 2015; 4(71):5.
- Abarquez, Ramon Jr. Risk Estimation of “kalawang”, Vital Signs February 1-28, 2015; 4(72):5.
- Ramon F. Abarquez, Jr. Always Easy to Look with Benefit of Hindsight Philippine Inquirer , Opinion, 2015; March 2.
- Abarquez, Ramon Jr. “Cost-efficient Risk Estimation & Diet”, Vital Signs March 1-31, 2015; 4(73):5.
- Ramon F. Abarquez, Jr. 6 Minute-walk-test, cost efficient risk estimation. Vital Signs April 1-31, 2015, 4(74): 13.
- Abarquez, Ramon Jr. “Smoking Cessation”, Vital Signs May 1-31, 2015; 4(75):3.
- Abarquez, Ramon Jr. “Cost – efficient Risk Estimation”, Vital Signs July 1-31, 2015; 4(77):5.
- Abarquez, Ramon Jr. “Prevent”, Vital Signs August 1-31, 2015; 4(78):5.
- Abarquez, Ramon Jr. “Worksite Health Promotion”, Vital Signs September 1-30, 2015; 4(79):3.

Awards

- UP Manila, CV Section, UP-PGH “Salamat Sa Ating Guro” Testimonial Award, JY Campos, Bayanihan Hall, UNILAB Compound, Mandaluyong City, July 29, 2015

- UP-PGH Plaque of Recognition “for his loyalty and commitment to UP-PGH and his passion to teach and practice his profession; forsharing his expertise as an outstanding cardiologist and professor to generations of medical students, residents and fellows and for his unwavering dedication to serve the Filipino people, given this 19th day of August 2015 at the UPMASA-PGH Science Hall
- Board of Directors, Philippine Association for the Study of the Overweight and Obese (PASOO) Testimonial Award, Isla Ballroom, EDSA Shangri-la Hotel, Pasig City, September 2, 2015
- Plaque of Recognition in recognition of his outstanding leadership and invaluable contribution to the Philippine Medical Association as Chairman of the PMA-CME, characterized by his selfless, dedicated services rendered for the welfare of the Association towards the attainment of its goals and mission, given September 20, 2015 at the Manila Pavilion Hotel, Manila Philippines during the opening ceremony, Medicine Week.

Academician ELIEZER A. ALBACEA

Significant position

Honorary Editor-in-Chief, Philippine Computing Journal

Academician ESTRELLA F. ALABASTRO

Significant positions

- Dean, College of Engineering, National University, Sampaloc, Manila
- Chair, Board of Directors, Amertron Inc., Paranaque, Metro Manila

Scientific Meetings, Conferences, Symposia Attended

- “Empowering women and youth in science, technology and innovation”, paper presented at ASEAN-Japan Workshop for Innovation, Science and Technology Cooperation, Kuala Lumpur, Malaysia, June 11, 2015.
- Attended the 12th Annual Meeting of Science and Technology in Society (STS) Forum, Kyoto, Japan, October 4-6, 2015.

National Scientist ANGEL C. ALCALA

Significant positions

- Member, NAST Executive Council
- Chairman, Board of Judges, NAST Environmental Science Award
- Member, Board of Judges, NAST NSTW Outstanding Research and Development Award
- Chair, NAST Biological Sciences Division
- Member, National Agriculture and Fisheries Education (NAFES) Board, CHED
- Chairman, Commission on Higher Education (CHED)-Technical Working Group on the Accreditation of Higher Education Institutions' Research Journals
- Chairman, Crocodylus Porosus Philippines, Inc. (CPPI) Board of Trustees. CPPI is the only organization promoting Crocodile Conservation and sustainable use of crocodile products.
- Adviser, NGO promoting the conservation of seven species of giant clams in Guinsiliban, Camiguin Island
- Chairman, National Network of Quality Assurance Agencies (NNQAA) which accredits academic courses in Philippine State Colleges and Universities
- Member, Philippine Institute of Traditional & Alternative Health Care (PITAHC) of the Department of Health
- Chairman, CHED committee for accrediting research journals of Universities and Colleges; Reviewer of scientific papers for presentation in international conferences; Co-chairman of the National Agriculture and Fisheries Education System (NAFES); Member of the Committee for Evaluation of published research papers for the CHED Republica Award.
- Research Adviser on marine research of Palawan State University, Western Mindanao State University, and the Jose Rizal Memorial State University
- Chairman, Scientific Council of the Panglao Island Executive Committee for Sustainable Environmental Protection Project of Panglao Island, Bohol (PIEC-SEPP)
- Chairman, Protected Area Management Board (PAMB) of the DENR, looking after the protection and good management of the Balinsasayao Twin Lakes Natural Park (BTLNP) in Sibulan, Negros Oriental.
- Chairman, PATH Foundation, Philippines; and Chairman of CAP College
- Member of the Board of Directors, Centro Escolar University, Mendiola, Manila
- Member of the Board of Trustees, Silliman University, Dumaguete City

Scientific Meetings, Conferences, Symposia Attended

Participated in several Round Table Discussions involving the Biological Sciences Division

Academician PORFIRIO A. M. ALIÑO

Significant positions

- Project Team Member, September 2013 – December 2018. Capturing Coral Reef and Related Ecosystem Services (CCRES) Project for East Asia and Pacific. Global Environment Facility (GEF) through Marine Environment and Resources Foundation (MERF), Inc.
- Consultant, December 2012-November 2017. Ecosystems Improved for Sustainable Fisheries (ECOFISH) Program. United States Agency for International Development (USAID) through Marine Environment and Resources Foundation (MERF), Inc.
- Project Leader, October 2011 to April 2016. Set up of Professional Master Program on Tropical Marine Ecosystem Management. United States Agency for International Development (USAID) through Marine Environment and Resources Foundation (MERF), Inc.

Academician RHODORA V. AZANZA

Significant positions

- Chairman, CHED Technical Committee on Environmental Science
- Member, CHED Technical Panel on Science and Math
- Member, National Organizing Committee on Philippines hosting of APEC 2015 meeting (2014-2015)

Publications

- Marquez, G. P. B., W. T. Reichardt, R. V. Azanza, D. F. L. Onda, A. O. Lluisma and M. N. E. Montano (2015). Dominance of Hydrogenotrophic Methanogens at the Peak of Biogas Production in Thalassic Digesters. Waste Biomass Valor DOI 10.1007/s 12649-014-9325-4.
- Onda, D. F., Lluisma, A. O. and RV Azanza (2014). Development, morphological characteristics and viability of temporary cysts of *Pyrodictinium bahamense* var. compressum (Dinophyceae) *in vitro*, European Journal of Phycology, 49:3, 265–275.

Completed researches

- Detection and Mitigation Technology and Early Warning System for Philippine Harmful Algal Blooms (HABTech) and Molecular Studies of HAB Causative Organisms and Associated Bacteria (HAB Genomics) (as program leader)-DOST funded (2013–2015)
- Extent Transfer of Alien Invasive Organisms in South/Southeast Asia Region by Shipping ASEAN – India Project (2013–2015)
- Program B: New and Improved *Kappaphycus* Varieties/Strains for Farming Project 1: Strain Development/Hybridization in *Kappaphycus* Utilizing Spores and Tissues- DOST funded (2013–2015)

Ongoing researches

- Potentially Invasive Marine Organisms Transferable by Ships in Selected Areas in the Philippines
- Development of Scaled up Depuration Technology for HAB Contaminated shellfish species
- Culture of Ciguatera Causative Organisms for Ciguatoxin Standard Production and Ciguamonitoring
- University of the Philippines Enhanced Creative Work and Research Grant: Harmful Marine Dinoflagellates in the Philippines

S & T Policy and Program Implementation including Conference/Seminar

- 13 to 16 December 2015, Speaker, 9th EASTHAB Scientific Symposium in Guangzhou, China
- Papers presented:
 - Recent Reports of Ciguatera Fish Poisoning in the Philippines
 - Towards the development of an early-warning system for HABs in the Philippines
- 21 to 29 November 2015, Invited Speaker, Meeting and Workshop on Higher International Collaboration at Universitat Autònoma de Barcelona, Barcelona Spain
- 21 to 25 October 2015, Resource Person, 9th Review Meeting of the ASEAN International Mobility for Students (AIMS) Programme at the Tsukuba International Congress Epochal Tsukuba, Japan
- 7 to 9 October 2015, Co-Chair, 11th APRU Research Symposium Multi Hazards around Pacific Ream, University of the Philippines
- 28 to 30 September 2015, QS Worldwide Conference, Nizhny Novgorod Fair Ground, Russia
- 1-2 September 2015, Invited Speaker, Western Pacific Naval Symposium, Environmental Working Group, Raffles and Fairmont Makati, Philippines
- 17 to 23 August 2015, Philippine Resource Person, 7th Forum for East Asia and Latin American Cooperation (FEALAC) Foreign Ministers' Meeting (FMM) in San Jose, Costa Rica
- 29 July to 01 August 2015, Philippine participant, 7th Asean University Network Rectors' Meeting and 31st AUN-BOT Meeting, Singapore
- 27 to 31 May 2015, Philippine participant, 5th ASEAN+3 Heads of International Relations Meeting held Beijing, People's Republic of China
- 12 to 16 May 2015, Philippine participant, SEAMEO RIHED, Fulbright Thailand 2015 International Workshop on "Innovative, Rigorous, and Open-minded IROs" in Bangkok, Thailand
- 27 to 30 April 2015, Philippine participant, Asean Europe Meeting (ASEM) Education Ministerial Meeting, Erasmus Mundus, Information Day held in Riga, Latvia

Honors/Recognition received

- UP Scientific Productivity Award- Scientist III, (Highest rank for UP Scientist)
- Pantas Awardee for Most Outstanding Researcher/Scientist. Philippine Council for Agriculture, Aquatic and Natural Resources. 22 June 2015

Academician ARSENIO M. BALISACAN

Significant positions

- Secretary of Socioeconomic Planning and Director-General, National Economic and Development Authority (NEDA), 14 May 2012 to 31 January 2016
- Chairman of the Board, Philippine Institute of Development Studies, 14 May 2012- 31 January 2016
- Chairman of the Governing Board, Philippine Statistics Authority, 28 September 2013 to 31 January 2016
- Chairman, Board of Trustees, Philippine Center for Economic Development (PCED), 14 May 2012 to 31 January 2016
- Chairman of the Governing Board, Philippine Statistical Research and Training Institute (PSRTI), 14 May 2012 to 31 January 2016
- Chairman of the Governing Board, Philippine Public-Private Partnership (PPP), 28 May 2013–31 January 2016

Publications

- Balisacan, A.M., U. Chakravorty, and M.V. Ravago (eds.), Sustainable Economic Development: Resources, Environment, and Institutions. US and UK: Elsevier Inc., 2015.
- Balisacan, A.M., "The Growth-Poverty Nexus: Multidimensional Poverty in the Philippines" in Sustainable Economic Development: Resources, Environment, and Institutions, eds. A.M. Balisacan, U. Chakravorty, and M.V. Ravago. US and UK: Elsevier Inc., 2015x, pp. 445–468.
- Fuwa, N., A.M. Balisacan, and F. Bresciani, "In Search of a Strategy for Making Growth More Pro-Poor in the Philippines", Asian Economic Papers 14(1): 202–226.

Selected Conferences Attended as Speaker

- New Zealand International Conference on Public Policies for Inclusive Growth Wellington, New Zealand , 09 January 2015
- 2015 APEC Senior Officials Meetings and Related Meetings. Clark and Subic, Philippines, 26–27 January 2015
- Ayala-UPSE Forum, Intercontinental Manila Hotel, 29 January 2015
- The Philippine Experience on Structural Reform, Economic Committee APEC New Strategy for Structural Reform, Widus Hotel, Clark, 02 February 2015

- US Embassy Regional Media Seminar, US Embassy, NOX 2 Building, 03 February 2015
- FOCAP Flagship and Year-Opening Annual Forum, Fairmont Hotel, Makati, 11 February 2015
- Wallace Business Forum, Rigodon Ballroom, Manila Peninsula Hotel, 18 February 2015
- Economic Briefing, Ateneo Graduate School of Business Amphitheater, Ateneo Professional Schools, Rockwell, Makati, 10 March 2015
- 3rd UN World Conference on Disaster Risk Reduction, Sendai, Japan, 15–17 March 2015
- 2015 Spring Meetings of the World Bank and IMF 2nd Washington, D.C., U.S.A., 16–20 April 2015
- EU-PH Business Dialogue, Rizal A Ballroom, Shangri-la Makati, 12 May 2015
- APEC PPSTI5 Meeting, Boracay, Aklan, 16 May 2015
- PACIBER Annual Meeting, Bali, Indonesia, 4 July 2015
- ECOSOC High-Level Segment, New York, U.S.A., 09–10 July 2015
- 2nd TOPS-LRA Summit, Ballroom 2 Fairmont Hotel, Makati, 28 July 2015
- ADB-EI International Policy Advisory Group Meeting, Auditorium A-B, ADB Headquarters, Mandaluyong City, 03 August 2015
- International Conference with Jeffrey Sachs, Ballroom 2, Hotel Intercontinental, Makati, 03 August 2015
- SSD Meeting, NAST Conference Room, Science Heritage Building, DOST Complex, 06 August 2015
- Energy Policy Development Program 1st Policy Forum, Bahia Room, Hotel Intercontinental Manila, 07 August 2015
- APEC Structural Reform Ministerial Meeting, Radisson Blu Hotel, Cebu City, 6–9 September 2015
- Social Economy Summit, Banquet Hall 2 & 3, Philippine International Convention Center 10 September 2015
- 23rd PECC General Meeting, Challenges of Promoting Inclusive Growth, Luzon Ballroom, Sofitel Philippine Plaza Manila, 11 September 2015
- FOCAP Media Forum on the Philippine Economy, Verbena Room, Marco Polo Ortigas 16 September 2015
- IFPRI Policy Forum, EDSA Shangri-la Hotel, 18–19 September 2015
- Inaugural Public Policy Conference, Emerald Function Room, Crowne Plaza, 22 September 2015
- Culminating Workshop Towards Zero Poverty, Palawan Ballroom, EDSA Shangri-la, 23 September 2015
- UN Summit for the Adoption of Post-2015 Development Agenda, New York, U.S.A., 25–27 September 2015
- Philippine Economic Briefing, Reception Hall, Philippine International Convention Center, 30 September 2015
- High-level Meeting on Implementing Reforms on Protection and NSTVET in the Philippines, Ballroom B, Crowne Plaza Manila, 06 October 2015
- Forbes Global CEO Conference, Grand Ballroom, Solaire, 14 October 2015
- ADB Regional Knowledge Forum on Post-Disaster Recovery, ADB Auditorium, Ortigas Center, Pasig City, 20 October 2016
- Agricultural Modernization for Inclusive Growth, CAMP General Membership SEARCA, Drilon Hall, University of the Philippines, Los Banos
- ADB Impact Evaluation for Development Effectiveness, ADB Multifunction Hall, Ortigas Center, Pasig City, 10 November 2015
- The Philippines in Transition: Structural Reforms for Sustained and Inclusive Growth PES 53rd Annual Conference, Hotel Intercon, 2/F Grand Ballroom, 10 November 2015
- APEC Economic Leaders Meeting, Sofitel Plaza, 17–20 November 2015

Academician JOSE MARIA P. BALMACEDA

Significant positions

- Dean, College of Science, UP Diliman
- Chair, CHED Technical Committee for Mathematics
- Member, CHED Technical Panel for Science and Mathematics
- Associate Editor of Bulletin of the Southeast Asian Mathematical Society, Science Diliman, Philippine Science Letters
- Project Leader for UP Diliman, National Science Consortium-ASTHRDP (DOST-SEI)
- Member, NAST Talent Search Committee and Poster Presentation Board of Judges

Academician ALLAN BENEDICT I. BERNARDO

Significant positions

- President, Asian Association of Social Psychology
- Senior Adviser, ASEAN Regional Union of Psychological Societies
- Editor Emeritus, The Asia-Pacific Education Researcher (Springer)
- Professor of Psychology, University of Macau

Publications

Articles in ISI (SCI/SSCI/Scopus) journals

- Bernardo, A. B. I. (2015, in press). Broadening psychology discourses on poverty and connecting with conversations on social change. *Silliman Journal*.
- Bernardo, A. B. I. (2015, in press). Poverty, privilege, and prejudice: Social psychological dimensions of socioeconomic inequalities in the Philippines. *Silliman Journal*.

- Bernardo, A. B. I., & Estrellado, A. F. (2015, in press). Locus-of-hope and help-seeking intentions of Filipino battered women victims of intimate partner violence. *Current Psychology*. Published online October 2015, doi:10.1007/s12144-015-9385-z.
- Qi, X., Zaroff, C. M., & Bernardo, A. B. I. (2015, in press). Autism Spectrum Disorder etiology: Lay beliefs and the role of cultural values and social axioms. *Autism: International Journal of Research and Practice*. Published online September 2015, doi:10.1177/1362361315602372
- Yu, J., Bernardo, A. B. I., & Zaroff, C. M. (2015, in press). The Chinese version of the Schizotypal Personality Questionnaire: Factor structure replication and invariance across sex. *Asia-Pacific Psychiatry*. Published online October 2015, doi:10.1111/appy.12215
- Bernardo, A. B. I. (2015). Hope in early adolescence: Measuring internal and external locus-of-hope. *Child Indicators Research*, 8, 699–715.
- Bernardo, A. B. I., Ganotice, F. A., & King, R. B. (2015). Motivation gap and achievement gap between public and private high schools in the Philippines. *The Asia-Pacific Education Researcher*, 24(4), 657–667.
- Bernardo, A. B. I., & Liu, J. H. (2015). Sharpening our understanding of social problems in Asian societies: The roles of culture and theory in socially engaged social psychology. *Journal of Pacific-Rim Psychology*, 9(2), 1–7.
- Du, H., Bernardo, A. B. I., & Yeung, S. S. (2015). Locus-of-hope and life satisfaction: The mediating roles of personal self-esteem and relational self-esteem. *Personality and Individual Differences*, 83, 228–233.
- Mante-Estacio, M. J., & Bernardo, A. B. I. (2015). Illusory transparency in bilinguals: Does language of text affect bilingual readers' perspective taking in reading? *Current Psychology*, 34, 744–752.
- Yu, J., Zaroff, C. M., & Bernardo, A. B. I. (2015). The hypervigilant misperception of Duchenne smiles in schizotypy. *Psychosis: Psychological, Social and Integrative Approaches*, 7, 348–358.
- Yu, J., Zaroff, C. M., & Bernardo, A. B. I. (2015). The use of digit ratios and dextrality to detect atypical neurodevelopment in schizotypy. *Asian Journal of Psychiatry*, 17, 104–105.

Completed research

- “Polyculturalism in Postcolonial Contexts in Asia: A Cross-Cultural Approach” University of Macau, Research and Development Administration Office, Multi-Year Research Grant, 2014–2015”

Ongoing researches

- “Attitudes Related to Socioeconomic Inequality and Wealth Redistribution in Asia: Cross-Cultural Psychology Studies” University of Macau, Research and Development Administration Office, Multi-Year Research Grant, 2014–2017.

- “Exploring Socioeconomic Class Differences in Injunctive Norms Related to Two Interpersonal Behaviors in Asian Societies: zou hou men and helping” University of Macau, Research and Development Administration Office, Multi-Year Research Grant, 2015–2017.

S & T Policy and Program Implementation including Conference/Seminar

Plenary address in scientific conferences:

- Bernardo, A. B. I. (2015, August). Inequalities in social psychology knowledge production in Asia: Towards social change in the Asian social psychology community. Presidential Address, 11th Biennial Conference of the Asian Association of Social Psychology, Cebu City, Philippines.
- Bernardo, A. B. I., (2015, July). Rethinking culture and psychology: Stretching the boundaries of psychology research in the Philippines. Psychological Association of the Philippines and De La Salle University, Manila, Philippines
- Bernardo, A. B. I., (2015, February). Psychology education and teaching across the globe: Challenges for psychology curriculum development in Philippine psychology. Psychological Association of the Philippines, Miriam College, Quezon City, Philippines

Presentations in scientific conferences:

- Bernardo, A. B. I., Tjipto, S., Hutapea, B., Salanga, M. G. C., & Khan, A. (2015, August) Distinguishing Among Lay Theories of Culture and Race in Four Asian Cultures. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.
- Clemente, J. A. R., Wang, Y., & Bernardo, A. B. I. (2015, August). Awaiting a Better Future: Filipino Migrant Workers' Social Mobility Beliefs and Expectations. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.
- Daganzo, M. A. A., Clemente, J. A. R., Pangan, C. A. C., & Bernardo, A. B. I. (2015, August). Filipino Adolescents' Conceptions of Socioeconomic Mobility: A Consensual Qualitative Research. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.
- Lizada, G. S. N., Tejada, P. H. Z., Garcia, J. V. A., Salanga, M. G. C., & Bernardo, A. B. I. (2015, August). Social Comparison, Trait Hope, and Cognitive Task Performance: A Goal Orientation Perspective. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.
- Pesigan, I. J. A., Bernardo, A. B. I., Yeung, S. S., Salanga, M. G. C., Yabut, H. J., Fernando-Resurreccion, K., and Resurreccion, R. R. (2015, August). Locus-of-Hope across Cultures: Construct Validation and Measurement Invariance. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.

- Wang, Y., Bernardo, A. B. I., Yeung, S. S., & Pesigan, I. J. A. (2015, August). Pathways from Collectivist Coping to General Well-being: The Mediating Role of Locus-of-Hope. 11th Biennial Conference of the Asian Association of Social Psychology, Waterfront Hotel, Cebu, Philippines.
- Rosenthal, L., Ramírez, L., Bernardo, A. B. I., & Levy, S. R. (2015, July). Polyculturalism and attitudes toward people from other countries in Colombia, the Philippines, and the U.S. Paper presented at the Interamerican Congress of Psychology, Lima, Perú.
- Yabut, H.J., Bernardo, A. B. I., & Fernando-Resurreccion, K. (2015, July). External locus-of-hope and its indicators of well-being. Paper presented at the 14th European Congress of Psychology, Milan, Italy.
- Bernardo, A. B. I., & Li, Y. (2015, June). Achievement goals mediate differences in academic emotions between Mainland Chinese and Macau university students. Paper presented at Redesigning Pedagogy International Conference, National Institute of Education, Singapore.

Academician **CHRISTOPHER C. BERNIDO**

Significant positions

- Editorial Board Member, Communications on Stochastic Analysis (<http://www.math.lsu.edu/cosa>; published by Serials Publication).
- Editorial Board Member, Philippine Science Letters (<http://philsciletters.org>).
- Reviewer, Mathematical Reviews (American Mathematical Society).
- Member of Advisory Board:
- The Philippine Scientist (University of San Carlos Press) ISSN 0079-146 (www.philjol.info/index.php/PSCI)
- Philippine Education Research Journal (www.perj.org)

National Scientist **GELIA T. CASTILLO**

Significant positions

- Emeritus Scientist, International Rice Research Institute
- Member, Board of Trustees, Philippine Rice Research Institute
- Board Member, CARD INC. Center for Agriculture and Rural Development (NGO) and CMDI - CARD Microfinance Development Institute
- Member, NAST Scientific Posters Committee

Ongoing research

Rice: The Tie that Binds (but once on a while divides)
ASEAN

Publications

- Root and Tuber Crops: Re-Discovered and Re-Valued: A Cross-Site Perspective (In press forthcoming in Asian Journal of Agriculture and Development)

In Press

- Rice Self-Sufficiency under the Lens of Provincial Analysis F.H. Bordey, G.T. Castillo, P. Moya and W.G. Padolina

S & T Policy and Program Implementation including Conference/Seminar

- January 9, 2015, CARD meeting on Strategic Direction Planning towards ASEAN Integration.
- January 17, 2015, CARD Microfinance Development Institute (CMDI) Annual Membership Meeting.
- January 19-22, 2015, CGIAR Gender and Agriculture Research Network Annual Meeting.
- January 26-27, 2015, IRRI-GRiSP Science Week Meeting
- February 3, 2015, NAST-SSD Meeting
- February 17, 2015, Human Development Network Meeting
- February 21, 2015, CMDI Board Meeting
- February 26, 2015, NAST Meeting
- March 11, 2015, Meeting of PhilRice Board with PhilRice Review Panel
- March 21, 2015, Board of CARD INC (NGO) Meeting
- April 22, 2015, NAST Talent Search for Young Scientists
- April 28, 2015, Human Development Network Inception Workshop on the Philippine Human Development Network Report on Wealth Inequality and HD
- May 14, 2015, Heirloom Rice Presentation at the National Museum
- May 15, 2015, Risk-based Audit Training at CMDI
- May 28, 2015, NAST Annual Academy Meeting
- June 4, 2015, Philippine Agricultural Lands: Are they worth protecting? Workshop. Presented paper: Let's Leave Space for Rice
- June 11, 2015, 37th Annual Scientific Meeting Preparatory Conference
- June 20, 2015, Board of Trustees Meeting – CARD INC. (NGO)
- June 29, 2015, Workshop: Towards Zero Poverty in the Philippines: Pursuing development and shared prosperity (NEDA)
- July 6, 2015, DA-Food Self-Sufficiency Program Training for Extension Workers
- July 9, 2016, NAST Annual Scientific Meeting, Moderator for Session: Does Taxing Sin Deliver us from Disease?
- August 6, 2015, NAST-SSD Division Meeting
- August 22, 2015, Board Meeting of CMDI
- August 27, 2015, Call to Action Message at the Global Forum on Research and Innovation for Health. Presented paper: A Personal Journey to Health
- September 9, 2015, PhilRice National R&D Conference

- September 19, 2015, Board Meeting, CARD, Inc (NGO)
- September 23, 2015, Climate Conference: Local adaptation actions with mitigation co-benefits
- October 17, 2015, Board meeting of CMDI
- November 12, 2015, Meeting with Dr. Dindo Campilan of the International Center for Tropical Agriculture
- November 19, 2015, NAST Special Committee Meeting
- November 23, 2015, NAST-SSD Meeting
- December 4, 2015, Roundtable Discussion on the Sweet Potato Industry
- December 9, 2015, Workshop on PhilRice Strategic Planning
- December 17, 2015, NAST Jubilee Celebration
- December 18, 2015, Board Meeting, CARD INC. (NGO)

Academician GISELA P. CONCEPCION

Significant positions

- Vice President for Academic Affairs, University of the Philippines System
- Professor, Marine Science Institute, University of the Philippines, Diliman
- Program Coordinator for Biodiversity Research, Philippine Genome Center, University of the Philippines System
- Coordinator, Biophysicochemical Techno Incubation Core Facility, National Science Complex
- Member, Bioethics Advisory Board, Stem Cell Treatment, Department of Health
- Editor, Philippine Science Letters

Ongoing researches

- Program Leader, Associate Program 4 of Philippine Mollusk Symbiont Program, International Cooperative Biodiversity Group (ICBG), funded by the US National Institutes of Health, Fogarty International, US National Science Foundation and US Department of Energy.
- Project Leader, Malunggay-derived Anti-tumor Agents: Isolation, Characterization, Bioactivity and Molecular Targets, funded by Philippine Council for Health Research and Development, DOST
- Project Leader, Conus/Turrid Project, funded by the research funds from Dr. Baldomero Olivera, University of Utah
- Project Leader, Synergistic Studies Combining Cytotoxic Compounds from Marine Invertebrates and Standard Chemotherapeutic Drugs, In-house grant, funded by the Marine Science Institute, University of the Philippines Diliman
- Project Leader, Discovery and Development of Health Products – Marine Component – Project 2: Anti-Pain and Anti-Neurodegeneration Drug Candidate: Discovery and Development, funded by Philippine Council for Health Research and Development, DOST

Publications

Journal Articles

- Barghi N, Concepcion GP, Olivera BM, Lluisma AO. High conopeptide diversity in *Conus tribblei* revealed through analysis of venom duct transcriptome using two high-throughput sequencing platforms. *Mar Biotechnol* (NY). 2015; 17(1):81–98.
- Barghi N, Concepcion GP, Olivera BM, Lluisma AO. Comparison of the Venom Peptides and Their Expression in Closely Related *Conus* Species: Insights into Adaptive Post-speciation Evolution of *Conus* Exogenomes. *Genome Biol Evol*. 2015 Jun 4;7(6):1797–814.
- Barghi N, Concepcion GP, Olivera BM, Lluisma AO. Structural features of conopeptide genes inferred from partial sequences of the *Conus tribblei* genome. *Mol Genet Genomics*. 2015 Sep 30.
- Barghi N, Concepcion GP, Olivera BM, Lluisma AO. Characterization of the complete mitochondrial genome of *Conus tribblei* Walls, 1977. *Mitochondrial DNA*. 2015 Oct 16:1–2.

Honors/Recognition received

- Fellow, The World Academy of Sciences (TWAS)
- UP Centennial Professorial Chair Grant

National Scientist MERCEDES B. CONCEPCION

Significant positions

- Vice President, Executive Council, and National Scientist, NAST
- Member, NAST Environment Science Award Committee
- Adviser, 40th NAST Anniversary Committee
- Chairperson, Inter-Agency Working Group on Population Projections, NSO, 2012 to date
- Chairperson, Inter-Agency Technical Committee on Population and Housing Statistics, Philippine Statistics Authority

Scientific Meetings, Conferences, Symposia Attended

Six Pre-ASM RTDs on Non-Communicable Diseases organized by the 6 NAST Divisions

Academician JOSE B. CRUZ JR.

Significant positions

- Professor Emeritus, University of Illinois, Urbana-Champaign, USA, 1987-present
- Professor Emeritus, University of California, Irvine, USA, 1992-present
- Professor Emeritus, Ohio State University, Columbus, USA, 2010-present

- Associate Editor, Journal of Optimization Theory and Applications
- ABET Program Evaluator for Kuwait University Computer Engineering Program
- Senior Adviser for International Accreditation, Philippine Computer Society (PCS) Information and Computing Accreditation Board (PICAB)

Academician **ALVIN B. CULABA**

Significant positions

- Executive Vice President for External Relations and Internationalization, De La Salle University
- University Fellow and Full Professor 10, Mechanical Engineering Department, De La Salle University
- Member, Presidential Coordinating Council for Research and Development (PCCRD)
- Member, Energy & Environment Expert Panel, Congressional Commission on Science & Technology and Engineering (COMSTE)
- Focal Person on Energy, National Academy of Science and Technology
- Member of the Editorial Board, Scientific Word Journal, 2012–present
- Member, Board of Directors, Asia Professional Education Network (APEN), 2012–present
- External Assessor, University of Malaya, 2011–present
- Editorial Advisor, Journal of Sustainable Energy and Environment, 2009–present
- Trustee, St. Paul University (St. Paul University System), Manila, 2012–2017
- Trustee, Columbia Technologies, Incorporated (CTI) Foundation, 2012–2015
- External Assessor of Mechanical & Environmental Systems, Engineering and Management, LCA Cleaner Production and Clean Technology, and Renewable Energy Systems, Universiti Malaya, Malaysia, 2011 to present

Ongoing researches

- Co-Project Investigator, “Life Cycle Assessment of Algal Biofuels”, Funded by USAID STRIDE PURE Grant
- Co-Project Investigator, “Automation of Coco-Sugar Production”, Funded by USAID STRIDE: PURE Grant
- Co-Investigator, Interdisciplinary Research Project on “Automated Microalgae Growth Rate Characterization Using Vision System”, Funded by DLSU Science Foundation

Completed researches

- Co-Investigator, Interdisciplinary Research Project on “A Molecular Dynamics Investigation of Extracting Water from *Nannochloropsis* sp.: A First Step in the Design, Fabrication and Testing of Novel Catalytic Materials in Microalgae Drying for Biofuel Production”, funded by DLSU Science Foundation

- Project Investigator, “The Development of a Technology Transfer Model for the DLSU Micro-Hydro Power (MHP) System at Barangay Parina, Ifugao”, SNAP-Aboitiz and DLSU
- Principal Investigator, “The development of a technology transfer model for the DLSU Micro-hydro Power (MHP) system at barangay Parina, Apayao”, Funded by DLSU Challenge Grant, Date completed: June 2015
- Principal Investigator, “Design and Development of a Micro-hydro Power (MHP) system at Barangay Parina, Apayao”, Funded by SNAP-Aboitiz and De La Salle University, Date completed: June 2015
- Co-Investigator, “A Molecular Dynamics Investigation of Water Extraction in the DOPC/DPPC/DSPC lipid bilayer of Microalgae, *Chlorella vulgaris*”. Funded Project by CHED PHERNet Sustainability Research. Completed: November 30, 2015
- Co-Investigator, “Development of Process Systems Engineering (PSE) Approaches to the Design And Operation of Low-Carbon Energy Systems”. Funded Project by CHED PHERNet Sustainability Research. Completed: November 30, 2015

Publications

- Ubando, A.T., Aviso, K.B., Culaba, A.B., Cuello, J.L., El-Halwagi, M.M., Ng, D.K.S., Tan, R.R., (2016). “A Fuzzy Mixed-Integer Linear Programming Model for Optimal Design of Polygeneration Systems with Cyclic Loads”. *Environmental Progress & Sustainable Energy* (In Press). ISSN: 1944-7450.
- Ubando, A.T., Cuello, J.L., El-Halwagi, M.M., Culaba, A.B., Promentilla, M.A.B., Tan, R.R., (2016). “Application of Stochastic Analytic Hierarchy Process for Evaluating Algal Cultivation Systems for Sustainable Biofuel Production”. *Clean Technologies and Environmental Policy* (In Press). ISSN: 1618-9558.
- Ubando, A.T., Culaba, A.B., Aviso, K.B., Tan, R.R., Cuello, J.L., Ng, D.K.S., El-Halwagi, M.M., (2015). “Fuzzy Mathematical Programming Approach in the Optimal Design of an Algal Bioenergy Park”. *Chemical Engineering Transactions* Vol. 45. (In Press). ISBN 978-8895608, ISSN 2283-9216.
- Ubando, A.T., Felix, C.B., Promentilla, M.A.B., Culaba, A.B., (2015). “Strategic site selection of microalgae industry in the Philippines using analytic hierarchy process”. *Chemical Engineering Transactions* Vol. 45. (In Press). ISBN 978-8895608, ISSN 2283-9216.
- Ducut, M.R.D., Villagrancia, A.R., Corpuz, J., Arboleda, N.B., David, M.Y., Manrique, R.B., Ubando, A.T., Culaba, A.B., (2015). Molecular dynamics study on the effects of varying temperature and pressure on phosphatidylcholine lipids for microalgae drying. 2014 International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management, HNICEM 2014 - 7th HNICEM 2014 Joint with 6th International Symposium on Computational

Intelligence and Intelligent Informatics, co-located with 10th ERDT Conference. DOI: 10.1109/HNICEM.2014.7016255. ISBN: 978-147994021-9.

- Ubando, A.T., Felix, C.B., Gue, I.H.V., Mayol, A.P., Toledo, N.A., Garibay, S.S., Jimenez, C.N., Biona, J.B.M.M., Culaba, A.B., (2015). "Multi-Criteria Decision Structure for the Assessment of Impact Factors of Algal Biofuels in the Philippines using Analytic Hierarchy Process", International Journal of Philippine Science and Technology (submitted November 2015, under review).
- Ducut, M.R.D., Villagrancia, A.R.C., Manrique, R.B., Corpuz, J., Ubando, A.T., Culaba, A.B., Kasai, H., Arboleda Jr., N.B., David, M.Y., (2016). "A Molecular Dynamics Study on Water Permeation in Lipid Bilayers for Biofuel Production". Journal of Cleaner Production (submitted November 2015, under review).

Journal Articles

- Ubando, A.T., Promentilla, M.A.B., Culaba, A.B., Tan, R.R., "Application of Spatial Analytic Hierarchy Process in the Selection of Algal Cultivation Site for Biofuel Production: A Case Study in the Philippines". IEEE Region 10 Humanitarian Technology Conference 2015. Waterfront Hotel, Cebu City, Philippines. December 9–12, 2015.
- Ubando, A.T., Felix, C.B., Gue, I.H.V., Mayol, A.P., Toledo, N.A., Garibay, S.S., Jimenez, C.N., Biona, J.B.M.M., Culaba, A.B., "Priority Evaluation of Life Cycle Impact Factors for Algal Biofuel Production in the Philippines using Analytic Hierarchy Process". Regional Conference on Mechanical and Manufacturing Engineering, AUN/SEED-Net. Eastparc Hotel, Yogyakarta, Indonesia. November 5–6, 2015.
- Ubando, A.T., Culaba, A.B., Aviso, K.B., Tan, R.R., Cuello, J.L., Ng, D.K.S., El-Halwagi, M.M., "Fuzzy Mathematical Programming Approach in the Optimal Design of an Algal Bioenergy Park". The 18th Conference of Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction (PRES Conference). Kuching, Sarawak, Malaysia. August 23–27, 2015.
- Ubando, A.T., Felix, C.B., Promentilla, M.A.B., Culaba, A.B., "Strategic site selection of microalgae industry in the Philippines using analytic hierarchy process". The 18th Conference of Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction (PRES Conference). Kuching, Sarawak, Malaysia. August 23–27, 2015.
- Felix, C.B., Ubando, A.T., Mayol, A.P., Culaba, A.B., "Selection of Potential Algal Cultivation Sites in the Philippines Using Spatial Analytic Hierarchy Process". De La Salle University Research Congress 2015, De La Salle University, Manila Philippines. March 2–4, 2015.

- Ducut, M.R.D., Villagrancia, A.R., Manrique, R.B., Corpuz, J., Ubando, A.T., Culaba, A.B., Kasai, H., Arboleda Jr., N.B., David, M.Y., "Examining Water Diffusion Through Phospholipids by Molecular Dynamics". De La Salle University Research Congress 2015, De La Salle University, Manila Philippines. March 2–4, 2015.
- Ubando, A.T., Tan, R.R., Culaba, A.B., Uy, M., Cuello, J.L., "Evaluation of Drying and Grinding Process on the Extraction of Algal Protein from *Scenedesmus obliquus* using Taguchi Method". 2015 Annual PAASE Meeting and Symposium, De La Salle University, Manila, Philippines. February 5-7, 2015. ISSN 1908-5907.
- Ubando, A.T., Sumabat, A.K., Biona, J.B.M., Culaba, A.B., Promentilla, M.A.B., Tan, R.R., Santos, B., Cuello, J.L., "Spatial Analytic Hierarchy Process for Ranking Potential Algal Cultivation Sites in the Philippines". 2015 Annual PAASE Meeting and Symposium, De La Salle University, Manila, Philippines. February 5–7, 2015. ISSN 1908-5907.

Honors/Recognition received

- Best Paper Nomination, Priority Evaluation of Life Cycle Impact Factors for Algal Biofuel Production in the Philippines using Analytic Hierarchy Process." Regional Conference on Mechanical and Manufacturing Engineering, AUN/SEED-Net, Eastparc Hotel, Yogyakarta, Indonesia, (November 6, 2015).
- Best Scientific Paper Award, A molecular dynamics investigation of water migration in a lipid bilayer for microalgae drying, National Academy of Science and Technology, Department of Science and Technology (July 2015)

Academician ANTONIO MIGUEL L. DANS

Significant positions

- Co-Chair, NAST Steering Committee, 37th Annual Scientific Meeting
- President, Philippine Society of General Internal Medicine, 2011– present
- Head, Adult Medical Research Unit, Department of Medicine, UP College of Medicine
- Professor 12, University of the Philippines College of Medicine, Department of Medicine, UP College of Medicine (June 2000 to present)
- Part-Time Professor, College of Medicine, McMaster University (2011–present)
- Head, Medical Research Unit, Department of Medicine, UP College of Medicine (June 2000–present)
- Director, Asia-Pacific Center for Evidence-Based Medicine (2001 to present)
- Associate Editor, Journal of Clinical Epidemiology, New York, USA (2002 to present)

- Member, Evidence-based Medicine Working Group (International), 1995–present
- Member, Phi Kappa Phi International Honor Society, University of the Philippines Chapter, 1979–present
- Member, Philippine Medical Association, 1984–present.
- Diplomate, Philippine College of Physicians
- Member, International Clinical Epidemiology Network, 1992 to present
- Member, Philippine Clinical Epidemiology Network, 1996.
- Member, Southeast Asian Clinical Epidemiology Network, 1994 to present

Publications

- Novel Approaches in Primary Cardiovascular Disease Prevention: The HOPE 3 Trial Rationale, Design and Participants Baseline Characteristics, *CanJ Cardiol*.
- Rationale, design, baseline Characteristics in Evaluation of Lixisenatide in Acute Coronary Syndrome, a long term cardiovascular end point trial of lixisenatide versus placebo *Am Heart J*.
- Lixisenatide in Patients with Type 2 Diabetes and Acute Coronary Syndrome, *N Engl Med*.

Completed research

Interstroke

Ongoing researches

1. TIPS-3
2. HOPE-3
3. COMPASS
4. PURE
5. Primary Care Study

Academician FABIAN M. DAYRIT

Significant positions

- Chair, National Science Consortium (NSC), Accelerated S&T Human Resource Development Program (ASTHRD)
- Chair, Technical Working Group on the Classification of Chemicals, BOI-DTI
- Chair, Steering Committee, Science Education Graduate Scholarships (SEGS), (CHED)
- Chair, Technical Panel for Nanotechnology, PCIEERD-DOST
- Member, Editorial Board, Philippine Journal of Science
- Editorial Board, ChemistrySelect, ChemPubSoc Europe
- Chairman, Scientific Advisory Committee, Asian and Pacific Coconut Community (APCC), Jakarta, Indonesia
- Editorial Board, CORD, Coconut R & D International Journal of the Asian and Pacific Coconut Community
- Member, Board of Trustees, Philippine Institute for Alternative Health Care (PITAHC), DOH

Publication

Fabian M. Dayrit, “The Dietary and Therapeutic Aspects of Coconut Oil,” *Indian Coconut Journal*, vol. LVII, no. 6, Oct 2015. Proceedings of the International Symposium on Quality Coconut Oil for Nutrition and Health, Sept 28–29, 2015, New Delhi, India.

Completed research

Project Leader: “Development of Technology for Efficient Microalgae Production: Photobioreactor Design, Feed and High-value Metabolites”, project funded by Bureau of Agricultural Research (BAR-DA). Year 2 of 3

Ongoing researches

- Standardization and Chemical Profiling of Medicinal Plants, PCHRD-DOST, 2014–16.
- Virgin Coconut Oil, Ketone Bodies and Alzheimer’s Disease: Rat Study, Philippine Coconut Authority / PCHRD, 2015–16.
- Identification of Pollutants in the Seven Lakes, San Pablo City, using Mass Spectrometry, AdMU University Research Council, 2015–16

Scientific Meetings, Conferences, Symposia Attended

- Fabian M. Dayrit, “New Strategies in the Development of Medicinal Plants”, Presented at the International Symposium: Biodiversity as Economic Resource — Innovative Exploitation for Science and Society, Ateneo de Manila University, Jan 18, 2016.
- L.G. Lagurin, M.O. Galingana, J.D.J. Magsalin, J.E.S. Escaño, and F.M. Dayrit, “Chemical Profiling of Philippine *Moringa oleifera* leaves”, Poster paper delivered at the: International Symposium: Biodiversity as Economic Resource – Innovative Exploitation for Science and Society, Ateneo de Manila University, Jan 18, 2016.
- Fabian M. Dayrit, “Plant Biodiversity, Medicinal Plants and Phytochemical Strategies”, plenary talk delivered at the 20th Convention of the Natural Products Society of the Philippines University of Santo Tomas, España, Manila December 1–2, 2015.
- Elvis Chua, Neil dela Rosa, Adrian Begonia, Fabian M. Dayrit, “Effect of Culture Conditions on the Phycocyanin Content of *Arthrospira platensis*”, contributed poster paper at the 20th Convention of the Natural Products Society of the Philippines University of Santo Tomas, España, Manila December 1–2, 2015.
- Lolita G. Lagurin, Maynard Galingana, Fabian M. Dayrit, “Plant Biodiversity and the Continuing Search for Therapeutic Compounds”, contributed oral paper delivered at the 20th Convention of the Natural Products Society of the Philippines University of Santo Tomas, España, Manila December 1–2, 2015.
- Fabian M. Dayrit, “Plant Biodiversity and the Continuing Search for Therapeutic Compounds”, plenary talk delivered

at the KKP-Southern Tagalog Convention: Harnessing Philippine Biodiversity through Chemistry, 5 November 2015, Los Baños, Laguna.

- Fabian M. Dayrit, "Updates on Coconut Oil and the Role of the Chemist", talk delivered at the First Mindanao Chemistry Congress, 22–24 October 2015, Cagayan de Oro City.
- Fabian M. Dayrit, "Review of Research on the Dietary and Therapeutic Aspects of Coconut Oil", first keynote talk delivered at the International Symposium on Quality Coconut Oil for Nutrition and Health, Sept. 28–29, 2015, Shangri La – Eros Hotel, New Delhi, India.
- Fabian M. Dayrit, "Reflections on Laudato Si': The Catholic Church and Paradigms of Development", talk delivered at the symposium Catholicism and the Evolution of Ecological Thought, Ateneo de Manila University, Sept. 26, 2015.
- Fabian M. Dayrit, Opportunities and Challenges for a Renewed Coconut Industry. Paper delivered at the 2015 COCOFED Scholars National Convention, Valle Verde Country Club, Pasig City, August 28, 2015.
- Fabian M. Dayrit*, Lolita G. Lagurin, Maynard O. Galingana, and Jaclyn S. Escano, "Chemical Profiling and Standardization of Philippine Medicinal Plants: *Vitex negundo* L." oral paper delivered at the 30th Philippine Chemistry Congress, Ateneo de Davao University, April 15–17, 2015.
- Fabian M. Dayrit, "A Research Agenda for Coconut Oil," Paper delivered at the International Conference on Coconut Oil 2015 (ICCO 2015) BITEC, Bangkok, Thailand; March 17–20, 2015.
- Fabian M. Dayrit, "On research mentoring and student progress: Why are we not producing the critical number of quality masters and PhD graduates," UPLB Graduate Faculty Conference, Tagaytay International Convention Center, February 15–16, 2015.
- Elvis Chua, Maria Krishna de Guzman, Ramon Macaraig, Lea Cristina Macaraig, Fabian M. Dayrit, "Development of a Low-Cost Photobioreactor for the Production of Spirulina for Aquaculture," 2015 Annual PAASE Meeting and Symposium, De La Salle University, Manila, February 5–7, 2015.

Academician ROMULO G. DAVIDE

Significant positions

- PFA-Pesticides Policy and Technical Advisory Committee (PPTAC)
- National Program Leader, Corn-Based Farmer-Scientists Research Development and Extension Program (FSTP)
- Technical Adviser, Lake Danao Water Crops Suitability Study in San Francisco, Camotes Island, Cebu
- Technical Adviser to Cebu Governor Hilario P. Davide III on FSTP and Agriculture Programs

Scientific Meetings, Conferences, Symposia Attended

- Several seminars and graduation program of the Corn-Based Farmer-Scientists RDE Training Program (FSTP) conducted in many provinces in Luzon, Visayas, and Mindanao.
- Organizer, 8th FSTP Congress, Cebu held on November 11, 2015, and attended by more 2,000 farmers trained under the program. The Cebu Governor Hon. Hilario P. Davide III provided full financial support and distributed sweet potato cuttings for planting to the farmer-delegates.

Academician ERNESTO J. DEL ROSARIO

Significant positions

Professor Emeritus, Institute of Chemistry, UP Los Baños

Academician SALCEDO L. EDUARDO

Significant positions

- Member, National Advisory Committee for Animal Disease Control & Emergency (NAC-ADCE)
- Member, UP System Emerging Interdisciplinary Research (EIDR) Project Monitoring and Evaluation Committee.
- Member, UPLB Professorial Chairs and Faculty Grant Selection Committee
- Member, SEARCA Professorial Chair Selection Committee
- Member, Committee for the Selection of UPLB Nominees for Professors Emeriti
- Member, Invitation Committee, 37th ASM, NAST PHL
- Member, Editorial Board, Journal of Veterinary Science
- Member, Editorial Board, Philippine Agricultural Scientist

Publications

Journal Articles and Chapter in Books

- EDUARDO, S.L. 2015. Species of the genera *Gastrothylax* Poirier, 1883 and *Carmyrius* Stiles and Goldberger, 1910 (Paramphistomoidea: Gastrothylacidae) occurring in Philippine ruminants. *Philippine Journal of Veterinary Medicine*, 52(2): 89–98.
- EDUARDO, S.L. 2015. *Freyana anatina* (Koch, 1844) (Acarina: Freyanoidea) from the wandering whistling-duck, *Dendrocygna arcuata arcuata* (Horsfield, 1824) (Anseriformes: Anatidae) in the Philippines. *Philippine Journal of Veterinary Medicine*, 52(2): 125–130.
- EDUARDO, S.L. 2015. Parasitic Zoonoses (pp. 362–384). In: Medical Parasitology in the Philippines, V.Y. Belizario, Jr. and W. U. de Leon, Editors, Third Edition, Diliman, Quezon City: University of the Philippines Press.

Completed research

- EDUARDO, S.L. Comparative Features of the Muscular Organs of Some Species of the Genus *Fischoederius* Stiles and Goldberger, 1910 (Trematoda: Paramphistomoidea: Gastrothylacidae) as Seen in Median Sagittal Section, with Remarks on the Geographical Distribution of Its Species.
- EDUARDO, S.L. Flukes from the Air Sac (*Cyclocoelum*) and Oviduct or Bursa of Fabricius (*Prosthogonimus*) (Trematoda) of Philippine Birds

Ongoing research

EDUARDO, S.L. New feather mites of the genera *neocalaobia* and *Hyomesalges* (Acari) from the Palawan Hornbill (*Anthracoseros marcheii* Oustalet, 1885) (Coraciiformes: Bucerotidae) in the Philippines

S & T Policy and Program Implementation including Conference/Seminar

- Speaker, Strengthening the Culture of Research and Publication. Presented during the UPLB Academic Leadership Conference on “Pathways to a Globally Competitive Research and Graduate University”, August 8–10, 2015, Subic Holiday Villas, Subic Zambales.

Honor/Recognition received

U.P. International Publication Award (one paper)

- Member - Committee on Science & Technology, UNESCO National Commission of the Philippines
- Member, Association of Academies of Sciences in Asia (AASA)
- Member, Technical Advisory Council – Congressional Commission on Science & Technology and Engineering (COMSTE)
- Member, Philippine Society of Mechanical Engineers (PSME)
- Member, Philippine Society of Agricultural Engineers (PSAE)
- Volunteer Consultant, Export Development Council (EDC)
- Chairman Emeritus, Philippine Foundation for Science and Technology (PFST)
- Founding President and Chairman, Philippine Technology Development Ventures, Inc. (PTDVI)
- Founding Chairman & Director, Philippine Quality & Productivity Movement (PQPM)

National Scientist EDGARDO D. GOMEZ**Significant positions**

- Regional Advisory Board Member of the Coral Triangle Center, Bali, Indonesia
- Member, The Philippine National Committee for Long-Term Ecological Research (LTER) and DIVERSITAS

National Scientist RAUL V. FABELLA**Significant positions**

- Council of Fellows (Philippines): East Asian Economic Association (Home of Asian Economic Journal) (<http://www.eaeaweb.com/4-information/4b-council-of-fellows.html>).
- Editorial Advisory Board: Philippine Review of Economics (Journal of the Philippine Economic Society and University of the Philippines School of Economics) (<http://www.econ.upd.edu.ph/pre/index.php/pre/pages/view/editorialboard>).
- President: IDEA (Institute for Development and Econometric Analysis) (<http://www.idea.org.ph/>).
- Chairman of the Board: Economic Research Associates
- Member, Board of Directors: BusinessWorld Publishing.
- Columnist: BusinessWorld

Academician CEFERINO L. FOLLOSCO**Significant positions**

- Member, Engineering Sciences and Technology Division, NAST PHL
- Member, National Research Council of the Philippines
- Member, DLSU College of Engineering - Board of Advisers

Academician RAFAEL D. GUERRERO III**Significant positions**

- Member-at-Large, Governing Board of the National Research Council of the Philippines
- Secretary-Treasurer, Philippine Fisheries Association
- Member, Technical Review Committee, Biotech Program Implementing Unit, Department of Agriculture
- Chair, Committee on Membership, National Research Council of the Philippines
- Member, Agricultural Science Division, National Academy of Science and Technology
- Lead Person, Working Group on Tilapia, Philippine Partnership for Sustainable Agriculture (PPSA)
- Technical Editor, Textbook on Coastal Aquaculture of the Philippines, University of the Philippines Visayas
- Adviser, Ph.D./M.S. Students of the School of Environmental Science and Management, University of the Philippines Los Baños
- Member, Coalition for Agriculture Modernization of the Philippines (CAMP)
- Focal Person, Master of Ceremonies and Moderator, RTD on Managing Philippine Coastal and Inland Fisheries, 17 March 2015, Acacia Hotel, Alabang, Metro Manila

- Master of Ceremonies and Moderator, Launching of 40th Anniversary of NAST, 17 December 2015, Manila Hotel
- Fisheries Specialist, Research and Development, “Strengthening Adaptation and Mitigation in Agriculture for Climate Change,” Department of Agriculture

Publications

- Guerrero, R.D. III. 2015. A Thai tilapia hatchery in Bataan. *Agriculture Monthly* 19(2):18–19.
- Guerrero, R.D. III. 2015. Lessons on aquafeeds from a specialist. *Agriculture Monthly* 19(5):16–17.
- Guerrero, R.D. III. 2015. What’s up with our municipal fisheries? *Agriculture Monthly* 19(6):18–19.
- Guerrero, R.D. III. 2015. Climate change and our fisheries. *Agriculture Monthly* 19(7):20–21.
- Guerrero, R.D. III. 2015. New findings on the tawilis of Taal Lake. *Agriculture Monthly* 19(9):26–27.
- Guerrero, R.D. III. 2015. The white goby fishery of Naujan Lake. *Agriculture Monthly* 19(10):30–31.
- Guerrero, R.D. III. 2015. Saving Lanao Lake. *Agriculture Monthly* 19(11):18–19.

Scientific Meetings, Conferences, Symposia Attended

- 82nd NRCP General Assembly Meeting and Scientific Conference, 11 March 2015, PICC, Pasay City
- National Scenario Building Workshop for Sustainable Growth in Aquaculture and Fisheries in the Philippines, WorldFish and PCAARRD, 28–30 April 2015, Los Baños, Laguna
- 37th Annual Scientific Meeting, National Academy of Science and Technology, 8 July 2015, Manila Hotel
- APEC 2015, High-Level Policy Dialogue on S & T and Higher Education, Department of Science and Technology, PICC, Pasay City
- 13th Annual Symposium of FishBase, International Rice Research Institute, 1 September 2015, Los Baños, Laguna
- 4th National Climate Change Conference, National Academy of Science and Technology, 2–3 September 2015, Hotel Jen, Manila
- National Summit for Participating Governance Towards Sustainable Fisheries, Bureau of Fisheries and Aquatic Resources, 28 October 2015, PICC, Pasay City
- 13th NRCP General Membership Assembly of the Mindanao Regional Cluster, Caraga State University, 24 November 2015, Butuan City, Agusan del Norte

Papers Presented

- “Status and Prospects of Philippine Aquaculture,” National Workshop on the Development of Improved On-farm Shrimp Feed Management, USAID, 18 March 2015, Gen. Santos City, South Cotabato
- “The Production and Trade of Tilapia in the Philippines,” TILAPIA 2015 Conference and Trade Exhibit, INFOFISH, 2–4 April 2015, Kuala Lumpur, Malaysia

- “Sustainable Freshwater Aquaculture for Rural Asia,” Regional Workshop on Sustainable Management of Food Security, Turkish Academy of Sciences, 9–10 April 2015, Istanbul, Turkey
- “The Impacts of Introduced Freshwater Fishes on Biodiversity and Aquaculture in the Philippines,” 2nd National Forum on Invasive Fishes, BFAR National Inland Fisheries Technology Center, 26 May 2015, Baras, Rizal
- “Fish Production Imperatives for Food Security in the Philippines: Challenges and Opportunities,” University of the Philippines Los Baños, 12 October 2015, Crimson Hotel, Alabang, Metro Manila
- “The Role of Science in the Sustainable Development of the Environment,” SALINLAHI Symposium, National Academy of Science and Technology, 5–6 November 2015, Gen. Santos City, South Cotabato

Honors/Recognitions received

- Recognized at the “Legends Talk Forum” as “The Father of Tilapia Sex Reversal” by the Bureau of Fisheries and Aquatic Resources, Bahay ng Alumni, 28 July 2015, University of the Philippines Diliman, Quezon City
- Naming of Training Room 2 of the PCAARRD Innovation and Technology Center in honor of R.D. Guerrero III, Philippine Council for Agriculture, Aquatic and Resources Research and Development, 17 December 2015, Los Baños, Laguna
- Research Fellowship grant (October 2015–September 2016), National Academy of Science and Technology, Philippines

Academician EMIL Q. JAVIER

Significant positions

- Senior Adviser, Biotech Coalition of the Philippines
- Member, Board of Directors of the Nutrition Center of the Philippines
- Vice Chair, Asia Rice Foundation
- Chair, Coalition for Agriculture Modernization in the Philippines (CAMP)
- Writer/Columnist, Why Not!., Sunday Manila Bulletin

S & T Policy and Program Implementation including Conference/Seminar

- Organized a public forum in November 2015 on “Water in Agriculture; Status, Challenges and Opportunities with the following Academicians as resource speakers: Acds. Agnes Rola, Guillermo Tabios III, and Ruben Villareal.
- Helped organize a new NGO “Coalition for Agriculture Modernization in the Philippines (CAMP)” together with N.S. Dolores A. Ramirez, N.S. Ricardo Lantican, Academicians Ruben L. Villareal and Eufemio T. Rasco, Jr.

National Scientist BIENVENIDO O. JULIANO

Significant positions

- Senior Expert, Philippine Rice Research Institute Los Baños. 1993–
- Chair, Election Committee, NAST
- Member, Editorial Board, Journal of Cereal Science 1987–
- Reviewed two scientific papers on rice for Journal of Cereal Science and 1 rice paper each for Cereal Chemistry and Journal of Agricultural and Food Chemistry

Publications

- Tuaño AP, LM Perez, TF Padolina, BO Juliano. 2015. Survey of grain quality of Philippine farmers' specialty rices. *Philipp Agric Scientist* 98:446–456.
- Juliano BO. 2016. Rice: role in diet. In B Caballero, P Finglas, F Toldrá, ed. *The Encyclopedia of Food and Health* vol 4:641–645. Academic Press, Oxford, UK.

Awaiting publication

- Juliano BO. 2016. Changing preferences of Filipinos for eating quality of rice. In SR Francisco, PC Sta Cruz, ed. *Changing Landscape in the Rice Farming Sector*. Philipp Rice Res Inst, Muñoz, Nueva Ecija, Philipp. (in press).
- Juliano BO. 2016. Rice overview. In H Corke, K Seetharaman, C Wrigley, ed. *Encyclopedia of Food Grains*. Elsevier, Ltd, Oxford, UK. (in press).
- Felix AdR, APP Tuaño, AC Mallillin, TP Trinidad, BO Juliano. 2016. Short-term satiety of brown rice and milled rice differing in apparent amylose content and glycemic index. *Philipp J Crop Sci* (accepted).
- Tuaño APP, MJC Regalado, BO Juliano. 2016. Grain quality of retail store and supermarket rices in the Philippines. *Intern J Philipp Sci Technol* (submitted).
- Juliano BO. 2016. Holistic overview on rice grain quality (review article). In N Sreenivasulu, ed. *Methods in Molecular Biology: Rice Grain Quality: Methods and Protocols*. New York, Springer Science+Business Media (submitted).
- Felix AdR, APP Tuaño, RR Solano, BO Juliano. 2016. Long-term satiety of brown and milled rices varying in apparent amylose content and glycemic index. *Philipp Agric Scientist* (in preparation).

S & T Policy and Program Implementation including Conference/Seminar

National Academy of Science and Technology 37th Annual Scientific Meeting, Manila Hotel, Manila, July 8–9, 2015

Honor/Recognition received

- Gawad Buhayani Award for scientific works on rice from the City of Calamba, June 19, 2015 (Rizal Day)
- Included in “2000 Outstanding Intellectuals of the 21st Century,” 9th ed. 2015. Intern Biographical Centre, Cambridge, England.
- Included in “Dictionary of International Biography,” 38th ed. 2015. Intern Biographical Centre, Cambridge, England.

Academician QUINTIN L. KINTANAR

Significant positions

- Academician, NAST
- Member, Health Sciences Division, NAST
- Chair, Scientific Technical Committee – Medical Sciences, Scientific Career Council, Scientific Career System
- Vice-Chairman, Board of Trustees, Philippine Health Research and Development Foundation
- Member, Executive Board, DOH Pharmacopeia Organization
- Member, Food and Drugs Administration Alumni Society

Ongoing research

Preparing a tutorial in Ouido Piano Playing Using Common Chords by Numbers

S & T Policy and Program Implementation including Conference/Seminar

- NAST Conferences/Seminars, Policy Forum and Meetings
- National Research Council of the Philippines (NRCP) Division III Medical Sciences Meetings/Seminars and Annual Convention
- Philippine Society of Endocrinology, Diabetes and Metabolism (PSEDM) Affairs
- DOST National Science and Technology Week Opening Ceremonies
- Meetings/seminars of the Food and Drug Administration Alumni Society

Academician RODEL D. LASCO

Significant positions

- Scientific Director, OML Center, Ortigas, Metro Manila
- Philippines Coordinator, World Agroforestry Centre (ICRAF)

S & T Policy and Program Implementation including Conference/Seminar

- Coordinated 4th National Climate Conference with about 200 delegates attending

Academician ANGEL L. LAZARO III

Significant positions

- Chair, Board of Judges Magsaysay Future Engineers/Technologist Award 2012 to present
- Chair, Membership Committee, 2012 to present
- Member, NSTW Board of Judges for Outstanding Research & Development Award 2012 to present
- Member, Board of Judges NAST Environmental Sciences Award
- In charge, NAST RTD on Water Supply & Waste (Sewerage) Disposal

S & T Policy and Program Implementation including Conference/Seminar

- NAST Environmental Science Award, Board of Judges meeting, 26 February 2015, NAST Conference Hall, DOST Cpd., Bicutan, Taguig City
- 91st Academy Meeting, 26 February 2015, NAST Conference Hall, DOST Cpd., Bicutan, Taguig City
- Board of Judges meeting, Outstanding R&D Awards, Acacia Hotel, Alabang, March 17, 2015
- Paper presentation and awarding of the NAST Environmental Science Award, 22 April 2015, New World by the Bay Hotel, Malate, Manila
- 37th Annual Scientific Meeting (ASM), Manila Hotel, July 8–9, 2015
- Division meeting, Engineering Sciences and Technology Division (ESTD), Racks, EL Pueblo, Pasig City, September 7, 2015
- PHIL-SWISS Business Forum, Corinthian Plaza Bldg., Makati City, September 30, 2015
- Meeting of the Board of Judges, Magsaysay Future Engineers/Technologists Award (MFET), New World by the Bay, Malate, Manila, October 29, 2015.
- Awarding Magsaysay Future Engineers/Technologists Award (MFET), Manila Hotel, December 16, 2015.
- Speaker, COFILCO FORUM on Analysis on SB 2623/ HB 1278, Asian Institute of Management Conference Center, Manila (AIM), July 24, 2015
- Speaker, COFILCO and Professional Organizations. Luncheon Dialogue and Senator Chiz Escudero, Asian Institute of Management Conference Center, Manila (AIM), August 17, 2015
- Speaker, 4th Philippine Overseas Construction Symposium, Philippine International Convention Center (PICC), October 22, 2015
- Speaker, Philippine Institute of Civil Engineers National Convention 2015, SMX Bacolod Convention, Bacolod City, December 2–4, 2015.

Academician LEONARDO Q. LIONGSON

Honor/Recognition received

Most Distinguished Alumnus Award
Leonardo Q. Liongson, BSChE mcl 1969, MSES (Hydraulics) 1973, UP Alumni Engineers (UPAE) and UP College of Engineering, given on November 7, 2015 during the UPAE Homecoming held at Ang Bahay ng Alumni, UP Diliman, Quezon City

Academician AURA C. MATIAS

Significant positions

- Dean, College of Engineering UP Diliman
- Executive Director, National Engineering Center
- Program Leader, Engineering Research & Development for Technology (ERDT) Program, DOST-SEI
- Member, Technical Panel for Industrial Engineering Programs, CHED
- MI Representative, AUN-SEED Net
- Vice Chairperson, MSAB, 51st Engineer Brigade, AFP
- Independent Director, Voyager Innovations, Inc.

Publications

- Matias, A.C. & Rustico, E.Z., “Assessment of Possible Factors Affecting Severity of Muscle Fatigue among Convenience Store Employees”, *Procedia Manufacturing*, Vol. 3 (2015), pp. 3432–3439.
- Kurata, Y.B., Bano, R.P., Matias, A.C., “Effects of Workload on Academic Performance among Working Students in an Undergraduate Engineering Program”, *Procedia Manufacturing*, Vol. 3 (2015), pp.3360–3367
- Rustico, E.Z., Matias, A.C., Grepo, L.C., “Manpower Utilization in the Powder Coating Production of a Powder Coating Company”, *Procedia Manufacturing*, Vol. 3 (2015), pp. 332–339
- Novabos, C. & Matias, A.C., “How Good is this Destination Website: A User-centered Evaluation of Provincial Tourism Websites”, *Procedia Manufacturing*, Vol. 3 (2015), pp. 3478–3485
- Kurata, Y.B., Matias, A.C., Grepo, L.C., “Manpower Utilization in the Hotdog Meat Processing Production of a Meat Processing Company”, *Procedia Manufacturing*, Vol. 3 (2015), pp. 340–345.

Completed researches

- Comprehensive Organizational Review, Performance Assessment and Audit of National Commission on Culture and Arts, (CORPAA Project), Mapua TechServe/UPNEC, October 3, 2013–April 30, 2015

- Development of a Business Plan for the Philippine Core Learning Center of Excellence in Environment and Socially Sustainable Infrastructure, World Bank

Ongoing research

Assessment of Water Demand in the East and West Concession Area, Metro Manila

Scientific Meetings, Conferences, Symposia Attended

- AUN-QA Tier 1 Training, Novotel Platinum Hotel, Bangkok, January 27–31, 2015
- Convenor, NAST RTD on “Design for Healthy Work & Living Environments”, Hotel Jen, February 5, 2015.
- Panelist, USAID STRIDE CARWIN Grants Deliberation, February 11, 2015.
- Plenary Speaker, International Conference on Electrical, Electronics and Computer Engineering, University of Perpetual Help, Las Pinas, February 12, 2015
- Plenary Speaker, “DOST-Enterprise”, IDEA Global Entrepreneurship Symposium 2015, Radisson Blu Hotel, Cebu City, February 26, 2015.
- Speaker, RTU Symposium, Momarco Resort, Tanay, March 13, 2015.
- PBDI Consortium, Launch, Dusit Hotel, March 17, 2015.
- Temasek Foundation-NUS Institutional Leadership Training, MSI, March 23–25, 2015.
- DOST-SEI RTD on S&T Priority Courses, Astoria Plaza, April 22, 2015.
- Asian Engineering Deans Summit, NUS, Singapore, May 11–13, 2015.
- NAST RTD on AEC Impact on Innovation Framework, Crowne Plaza Hotel, May 21, 2015.
- AUN-SEED Net Workshop, Bangkok, June 12, 2015.
- Panel Discussant, “Ensuring Patient Safety into Technology Design”, 1st ASEAN Patient Safety Congress, Sofitel, June 26 2015.
- Plenary Panel Discussant, PIIE/ICPR Conference, Marriot Hotel, July 5, 2015.
- 37th NAST Annual Scientific Meeting, Manila Hotel, July 8–9 2015.
- 11th ERDT Congress, SMX Convention Center, July 20, 2015.
- 3rd International Conference on the Human Side of Service Engineering, Caesar’s Palace, Las Vegas, USA, July 26–29, 2015.
- 16th International Conference on the Human Aspects of Advanced Manufacturing: Managing Enterprise of the Future, Las Vegas, USA, July 26–29, 2015.
- AEESEAP, Bandung, Indonesia, August 19–21, 2015.
- Participant, UP-CIDS Policy Discussion Series on ASEAN Integration: Implications on Philippine Higher Education and Professionals, September 8, 2015.
- 2015 Innovation Summit, September 21, 2015.
- 4th National Climate Change Conference, NAST, Hotel Jen, September 23, 2015.
- Speaker, “CHED Memo”, UP Diliman General Education Conference, NIP Auditorium, September 28, 2015.
- Guest Speaker, Camp Atienza Day, 51st Engineer Brigade, Camp Atienza, October 8, 2015.
- Panel Reviewer, DOST-Newton Fund, Marco Polo Hotel, October 13, 2015.
- NAST RTD on Information Sharing, NAST Bicutan, October 29, 2015.
- Opening Message, Regional Conference on Electrical Engineering, Acacia Hotel, October 16, 2015.
- MI Representative, AUN-SEED Net Steering Committee Meeting, Bangkok, Thailand, November 26–27, 2015.
- 12th ERDT Conference, December 9, 2015.

Honors/Recognition received

- 2015 Outstanding Science Administrator Award (Dioscoro L. Umali Medal), National Science & Technology Week, Department of Science and Technology, SMX Convention Center, July 24, 2015.
- ASEAN Engineer (AE 0502), ASEAN Engineers Register, ASEAN Federation of Engineering Organizations (AFEO) Governing Board.

Academician

EVELYN MAE TECSON-MENDOZA

Significant positions

- Professor Emeritus, University of the Philippines Los Baños, since 2012.
- Secretary, National Academy of Science and Technology Philippines, NAST PHL, 2005 to date
- Executive Secretary, Scientific Career Council, Scientific Career System c/o NAST PHL, May 2013 to date
- Chair, Chemical, Mathematical and Physical Sciences Division, NAST PHL, 2003 to date
- Member, Editorial Board, Science Editing, Published by the Korean Council of Science Editors, from 14 August 2014. <http://www.escienceediting.org/>
- Overseas Editor, Bioscience, Biotechnology and Biochemistry, Published by the Japan Society for Bioscience, Biotechnology and Agrochemistry, <http://www.jsbba.or.jp>, from March 2007 to date.
- Chair, Committee for Institutional Capacity Enhancement for Regulation and Research, DA-Biotech Program (DA Special Order No. 388 s.2001, August 14, 2001)
- Co-chair, Emerging Interdisciplinary Research and Development Program (EIDR) Management and Monitoring Committee, UP System

Publications

- Caldo KMP, Garcia RN, Tecson Mendoza EM (2015). Biochemical and molecular characterization of two 11S globulin isoforms from coconut and their expression analysis during seed development. *International Journal of Philippine Science and Technology* 8(3): 46–51.
- Tecson-Mendoza EM. 2015. Scientific and academic journals in the Philippines: status and challenges. *Science Editing*, 2 (2): 73–78.

Conferences/Workshops/Symposia Attended as Speaker

- Tecson-Mendoza EM. Scientific Career System. MSU-IIT College of Science and Mathematics (CSM) Scientific Forum, 12 February 2015, Iligan City.
- Tecson-Mendoza EM. Special message to awardees for research and teaching excellence of MSU-IIT College of Science and Mathematics, 12 February 2015, Iligan City.
- Tecson-Mendoza EM. 2015. Scientists and Their Social Responsibility. Philippine Society of Youth Science Clubs, SEARCH. 07 March 2015, PhilVolcs, Quezon City.
- Tecson-Mendoza EM. 2015. The path towards a Forward-Looking, Globally Competitive Graduate Research University. UPLB Strategic Planning Workshop, 23 February 2015. Tagaytay City.
- Tecson-Mendoza EM. 2015. Fostering Excellence in Research Towards Lifelong Innovation. 9th Annual University Research Forum. March 6, 2016, Centro Escolar University, Manila.
- Tecson-Mendoza EM. Writing Publishable Scientific Papers. OVCRE R & D Project Implementation and Management Workshop, May 5, 2015; OVCRE Writing Scientific Papers Workshop. October 27–28, 2015.
- Tecson-Mendoza EM. Ethics in Research and Publication. OVCRE R & D Project Implementation and Management Workshop, May 5, 2015; OVCRE Writing Scientific Papers Workshop. October 27–28, 2015.
- Tecson-Mendoza EM. 2015. Strategies for Enhanced Innovation and Competitiveness for Cell Biology Education and Research in the Philippines. Symposium Philippine Society for Cell Biology, October 26–27, 2015.

Corresponding Member EDUARDO R. MENDOZA

Significant positions

- Visiting Scientist, Max Planck Institute of Biochemistry (Oct 2011–present)
- Consultant, “Future Emerging Technologies” Research Program of EU FP7
- Adjunct Professor, Department of Computer Science and Institute of Mathematics, UP Diliman (2005–present)

Academician MARCO NEMESIO E. MONTAÑO

Publications

- Montaña, M. N. E., Bongon, K. N., Advincula, C. M. A. Seaweed Utilization among Philippine Coastal Communities. University of the Philippines Diliman. 2015
- Tantengco, GOA, Limbo, AC, Montaña, MNE and Jacinto, DS. 2015. Cytotoxic activity of crude extract and fractions from *Sargassum siliquosum* (JG Agardh) and other seaweeds against selected human cancer cell lines. *International Journal of Biosciences* 7(2): 207–215.

Completed researches

- DOST-Seaweed Project C1: Improvement of Seaweed Post-harvest and Carrageenan Extraction Technology
- DOST-Seaweed Project C3: Characterization and Development of New Poly- and Oligo-saccharides for Various Applications
- DA-BAR Project: Bench-scale Production of Fucoidan from Philippine Brown Seaweeds for use in Mariculture and Medicinal Applications Y4
- DOST PCAARD PANTAS: Comprehensive Survey on the Existing Food and Household Utilization of Philippines Seaweeds
- DDHP Project 3: Herbal Extracts from Beach Forest and Mangroves of Aurora and Other Selected Sites for Bioactivity and ADMETox Assay

Ongoing researches

- DA BAR: High-throughput Screening for Quorum Sensing-inhibitory Compounds from Selected Philippine Marine Algae and Surface-associated Marine Microorganisms for Potential Anti-biofilm/biofouling Applications (Phase 1)
- USAID STRIDE Pilot scale production of *Halymenia durvillei* Bory de Saint-Vincent: post-harvest evaluation of phycobiliproteins and lambda-like carrageenan

S & T Policy and Program Implementation including Conference/Seminar

- Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology, DOST Region II Tuguegarao City, Cagayan Valley, December 8, 2015
- Speaker, Enhancing Marine and Agricultural Products through Biotechnology, J. Burgos Media Services, Inc., San Antonio Resort, Lawis Baybay, Roxas City, Capiz, November 27, 2015
- Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology, DOST Region VIII, Tacloban City, Leyte, November 10, 2015
- Speaker, Training on Extraction and Application of Lambda-carrageenan, National Seaweed Technology

- Development Center, AGM Beachfront Resort, Dancalan, Donsol, Sorsogon, October 27, 2015
- Judge, Best Presentation, 13th PAMS National Symposium on Marine Science Greenleaf Hotel, General Santos City, October 24, 2015
 - Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology, DOST Region X Cagayan de Oro City, Misamis Oriental, October 20, 2015
 - Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology DOST Region XIII, Butuan City, Agusan del Norte, September 15, 2015
 - Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology, DOST Region IV-B, PSTC Palawan, Puerto Princesa City, Palawan, 19–20 May 2015
 - Speaker, The Seaweed Industry in Eastern Visayas: The Way Forward, Bureau of Fisheries and Aquatic Resources, BFAR Regional Office No. VIII, Sabin Resort Hotel, Ormoc City, 16–17 April 2015
 - Speaker, Ethics in Research and Development, National Academy of Science and Technology, Philippines, Department of Science and Technology, Southern Tagalog Consortium for Industry and Energy R&D, Regional Seminar Workshop on Research Upgrading and Performance Evaluation, Regional Food Safety and Quality Assurance Center, (RFSQAC) DOST CALABARZON, S&T Complex, Timugan, Los Banos, Laguna, 19–20 March 2015

Honors/Recognition received

- The 2015 International Publication Award (2 papers), University of the Philippines, December 2015
- University Scientist 2, University of the Philippines, Diliman, Quezon City, September 2013–2015
- UP Diliman Centennial Professorial Chair, University of the Philippines, July 2014–June 2015, Awarded on February 2015
- The 2014 International Publication Award (2 papers), University of the Philippines, December 2015

Academician JAIME C. MONTOKA

Significant positions

- Philippine Focal Person for the ASEAN Sub-Committee on Biotechnology, 2006–current
- Philippine Focal Person for Health for the ASEAN Flagship Program on Health, 2010 to current
- National Focal Person for Health for the EU-SEA Research Program, 2010 to current

- Editor, Diseases for Control Priorities 3 (DCP3) of the InterAcademy Panel, 2013–2015
- Coordinator, ASEAN Network for Drugs, Diagnostics, Traditional Medicine and Vaccines Innovation, 2009 to current
- Chair, Health Sciences Division, NAST, 2013–2015
- Member, Board of Directors, Philippine Institute for Traditional and Alternative Health Care (PITAHC), 2005–current
- Member, Board of Directors, Philippine College of Pharmaceutical Medicine (PCPM), 2010–current
- Member, Governing Council of the Philippine Council for Health Research and Development, 2005–current
- Member of the Board, Philippine Health Research Ethics Board, 2006–current
- Member, Advisory Board of the National Institutes of Health, 2006–current

National Scientist

BIENVENIDO F. NEBRES, SJ

Significant positions

- Chairperson, Technical Panel on Science & Math (TPSM), Commission on Higher Education (CHED)
- Chairperson, Technical Working Group (TWG) for Faculty Development, Commission on Higher Education (CHED)
- Chairperson, Project Advisory Group (PAG), Philippines-California Advanced Research Institute (PCARI)
- Member, Board of Trustees, Georgetown University, Washington, DC
- Member, Board of Trustees, United Board for Christian Higher Education in Asia, New York and Hong Kong
- Member, Board of Trustees, Gawad Kalinga
- Member, Board of Trustees, Synergeia Foundation
- Member, Board of Trustees, National Cooperative Movement Mutual Fund of the Phils, Inc.
- Member, Board of Trustees, AY Foundation
- Member, Board of Trustees, Ateneo de Iloilo
- Professor, Ateneo de Manila, Department of Mathematics: Two (2) classes per semester -- either senior undergraduate or graduate: SY 2014–15

Academician REMIGIO M. OLVEDA

Significant positions

- President: Asian Foundation for Tropical Medicine Inc., RITM Compound, Filinvest City, Alabang, Muntinlupa City
- Consultant, Research Institute for Tropical Medicine, Department of Health, Filinvest City, Alabang, Muntinlupa City

Corresponding Member **EDUARDO A. PADLAN**

Significant positions

- Consultant, Synthetic Biologics, Inc.
- Co-Editor, Philippine Science Letters

Academician **CARMENCITA D. PADILLA**

Significant positions

- Chancellor, University of the Philippines Manila
- NAST Representative to the InterAcademy Medical Panel (IAMP)
- Member, Executive Committee, InterAcademy Medical Panel (IAMP), a global network of more than 60 academies in the world
- Council Member, Human Genome Organization, an international organization of scientists from 69 countries
- Vice President and Treasurer, the International Society for Neonatal Screening

Publication

Bradford L. Therrell, Carmencita David Padilla, J. Gerard Loeber, Issam Kneisser, Amal Saadallah, Gustavo J.C. Borrajo, and John Adams. Current status of newborn screening worldwide: 2015. *Seminars in Perinatology*. 2015 Vol 39: 171–187.

Conferences/Workshops/Symposia Attended as Speaker

- Joint Session InterAcademy Partnerships / InterAcademy Medical Panel / InterAcademy Council, New Delhi, India 28–29 September 2015 [CDP as NAST representative]
- “Overcoming Obstacles to Newborn Screening in a Developing Country”, International Conference on Birth Defects and Disabilities, Tanzania, September 21–24, 2015.
- Philippines Case Study: Overcoming Finance and Budget Constraint, First Vietnam Rare Disease Forum, Hanoi, Vietnam, September 16, 2015.
- Workplace Wellness across the Lifespan: A Project for Promoting the Health and Birth Outcomes of Young Workers in Low- and Middle-Income Countries – Philippines, International Conference on Birth Defects and Disabilities Tanzania, September 21–24, 2015
- Expanding Newborn Screening and the Initiation of Regional Follow-up in the Philippines. 11th Asia Pacific Conference on Human Genetics 2015, Hanoi Vietnam, September 16–20, 2015.
- Journeys in Research and Innovation: Lessons from Health Leaders, Global Pre-Forum, Philippine International Convention Center, August 23, 2015.

- Jose Albert Memorial Lecture: From Disease to Wellness, The Epigenetics of Health, Department of Pediatrics Centennial Celebration - Grand Postgrad Symposium, Manila Hotel, September 9, 2015
- “Transforming Ideas to Real Innovations”, Biocamp 2015, Philippine International Convention Center, July 28, 2015.
- Sustainability of Advocacy Work, Wonca Working Party for Women and Family Meeting, Alvior Hall, June 18, 2015.

Academician **WILLIAM G. PADOLINA**

Significant positions

- Executive Director V (Project Manager), CHED Philippine-California Advanced Research Institutes (PCARI) Project
- Member of Advisory Body, USAID Science, Technology, Research and Innovation for Development (STRIDE)
- Member, PIDS Board of Trustees
- Member, DA Biotech Steering Committee
- Member, Scientific Career Council
- Senior Advisor, IRRI
- Senior Fellow, SEARCA
- Member, SEARCA Publications Board
- Member, Editorial Board, Philippine Journal of Science
- President, National Academy of Science and Technology

Academician **JURGENNE H. PRIMAVERA**

Significant positions

- Chief Mangrove Scientific Advisor, Zoological Society of London, U.K.
- Co-Chair, Mangrove Specialist Group of the IUCN Species Survival Commission, Switzerland

Publications

- Primavera JH and SY Lee. 2015. The Magical Mangroves of KII, pages 322–330. In *No More Endlings: Saving Species One Story at a Time* (ed A. Hegan). Motivational Press, Florida, USA.
- Primavera, JH. 2015. Bagalunga *Melia azedarach* vs. the non-native *Neem Azadirachta indica*, pp. 25–27. In *Philippine Native Trees 202 – Up Close and Personal, Green Convergence and Hortica Filipina*, ABS-CBN Publishing, Quezon City.
- Primavera, JH. 2015. Bansalagin *Mimusops elengi* pp. 68–69. In *Philippine Native Trees 202 – Up Close and Personal, Green Convergence and Hortica Filipina*, ABS-CBN Publishing, Quezon City.

- Primavera, JH. 2015. Malatinta *Diospyros maritima*, pp. 224–225. In Philippine Native Trees 202 – Up Close and Personal, Green Convergence and Hortica Filipina, ABS-CBN Publishing, Quezon City.
- Primavera, JH. 2015. The biggest mangrove trees in the Philippines, pp. 259–260. In Philippine Native Trees 202 – Up Close and Personal, Green Convergence and Hortica Filipina, ABS-CBN Publishing, Quezon City.
- Primavera, JH. 2015. The tale of three Terminalias, pp. 274–275. In Philippine Native Trees 202 – Up Close and Personal, Green Convergence and Hortica Filipina, ABS-CBN Publishing, Quezon City.

S & T Policy and Program Implementation including Conference/Seminar

- Provided technical input to House Bill 5943 (National Coastal Greenbelt) introduced by Cong. Rodel M. Batocabe filed 28 July 2015
- Led “Ride of the Planting Bikers” with Iloilo Cycling Youth Club and other bikers -- planting of est. 2,174 bungalow *Avicennia marina* mangrove seedlings along Esplanade 2 of the Iloilo River, 30 May 2015
- “Science-based Mangrove Rehabilitation and Conservation, and Relevant Laws,” Tanon Strait Protected Seascape Stakeholders’ Summit and Protected Area Management Board General Assembly (organized by Oceana), Cebu City, 12 Feb. 2015
- “Resilience in mangroves in Eastern Samar and Bantayan,” ZSL Fisheries Connectivity Workshop, Cebu City, 16–17 Feb. 2015
- “Coastal Erosion – the case study of Pedada, Ajuy Breakwaters,” ZSL Fisheries Connectivity Workshop, Cebu City, 16–17 Feb. 2015
- “Community-based Mangrove-Beach Forest Rehabilitation,” 3rd National Auxiliary Board Meeting, Philippine Coast Guard Auxiliary, Iloilo City, 28 Feb. 2015
- Mangrove Policy Forum on AUU Ponds, Ateneo de Manila University, Quezon City, 4 March 2015
- Roundtable Discussion on Philippine Marginal Seas, National Academy of Science and Technology, Hotel Jen Manila, Metro Manila, 24 Mar. 2015
- “How Schools can Push Science-based Mangrove Rehabilitation and Conservation, 50th Annual Convention of the Biology Teachers Association of the Philippines, Ateneo de Manila University, Q.C., 8–10 April 2015
- “A Primer on Beach Forests,” 50th Annual Convention of the Biology Teachers Association of the Philippines, Ateneo de Manila University, Q.C., 8–10 April 2015
- Forum on Pushing the Mangrove Agenda in the Yolanda Corridor (OPARR Legacy Project) and launching of Community-Based Mangrove Rehabilitation Training Manual and Field Guide to Philippine Mangroves (ZSL-PTFCF), UP Diliman, Quezon City, 14 April 2015
- Meeting, Global Resilience Challenge, Monterey Bay Sanctuary Exploration Center, Santa Cruz, California, 16–17 April 2015
- “Climate Change and Coastal Mangrove-Beach Forest Greenbelts,” Workshop on Vulnerability Assessments and Social Marketing, Philippine Ecosystem Alliance, Cebu City, 8–11 June 2015
- “Mangrove Conservation and Sustainable Development” in Master in Public Management major in Local Governance and Development (MPM-LGD), Development Academy of the Philippines Graduate School of Public and Development Management, Leyte Normal University, Tacloban City, 5 June 2015 and West Visayas State University, Iloilo City, 18 June 2015
- 3rd Blue C meeting, Wildlife Rescue Center Conference Room, Biodiversity Management Bureau, Quezon City, 19 June 2015
- Panel Member, The Challenge of Resilience on Coastal and Marine Ecosystems: Lessons and Suggestions from a Post-Disaster Context, Continuing Voyage in Building Small Islands Resilience in the Philippines: Towards Understanding Geographically Isolated and Vulnerable Areas, SURGE, 22–23 June 2015, Iloilo City
- “Mangrove Rehabilitation Experience: Case of ZSL Work in Panay Island,” Conference on Increasing Resiliency to Climate Change and Natural Disasters through Reforestation, Rain Forest Restoration Initiative, Quezon City, 8 July 2015
- 3rd IUCN Species Survival Commission Leaders’ Meeting Meeting, Abu Dhabi, United Arab Emirates, 16–18 Sept. 2015
- “Mangrove Rehabilitation in Manila Bay,” Manila Bay Conference, Manila Ocean Park and BFAR-NFRDI, Luneta Park, Manila, 29 Sept. 2015
- “Mangrove Biology, Management and Rehabilitation,” Workshop for the Bued Mangrove Park, ECOFISH, Alaminos, Pangasinan, 1 Oct. 2015
- Annual Meeting, Pew Fellows Program in Marine Conservation, Rio Grande, Puerto Rico, 15–19 Oct. 2015
- “The Role of Breakwaters and Ecoparks in Mangrove Rehabilitation and Conservation: the ZSL-CMRP Story,” Turning the Tide on Mangrove Loss, IUCN Mangrove Specialist Group, Xiamen University, China, 12–13 Nov. 2015
- “Mangroves as Mudcrab Habitats,” National Mudcrab Congress, SEAFDEC Aquaculture Department, Iloilo City, 16–18 Nov. 2015
- “Mangroves and Beach Forest Greenbelts for Coastal Protection,” Butuan Global Forum, Fr. Urios University, Butuan City, 26 Nov. 2015
- “Mangroves and Beach Forest Greenbelts for Coastal Protection,” Butuan Global Forum, Caraga State University, Butuan City, 26 Nov. 2015

- “A Zoologist’s Love Affair with Plants — Mostly Native, Many Coastal Species,” Third International Symposium, Philippine Native Plant Conservation Society, U.P. Diliman, 27–29 Nov. 2015

Honor/Recognition received

Academician, National Academy of Science and Technology, Manila Hotel, Metro Manila, invested 9 July 2015

Academician EUFEMIO T. RASCO JR.

Significant positions

- National Committee on Biosafety of the Philippines
- Member, Special Technical Committee, Scientific Career System
- Member, Editorial Board, Banwa (Journal of UP Mindanao)
- Member, Editorial Board Journal on Rice-BASED Agribiosystem (Journal of PhilRice)

Publication

Lapitan, V.C., Nicolas, K.L. C., and Rasco, Jr., E.T. 2015. Tissue culture technique for clonal propagation of nipa palm (*Nypa fruticans* Wurmb., Arecaceae) from embryo culture. *ASIA LIFE SCIENCES The Asian International Journal of Life Sciences* 24(1): 111–125.

S & T Policy and Program Implementation including Conference/Seminar

- January 22, 2015. Presented a seminar on the Rural Transformation Movement at IRRI
- January 29, 2015. Launched the nipa bioethanol plant (PhilRice Project) at Infanta, Quezon
- February 16, 2015. Presented a seminar “The Science Behind Organic Farming” during the Science and Society Symposium at UP Mindanao
- June 2, 2015. Served as Resource Person in RPE Seminar in San Fernando, La Union
- November 9, 2015. Served as Resource Person in RPE Seminar in Tacloban City.
- November 22–24, 2015. Served as Reviewer for Newton Fund proposals on rice, Hanoi, Vietnam
- December 11–14, 2015. Attended the Biosecurity Meeting organized by the US Academy of Science and the Royal Netherlands Academy of Arts and Sciences in Geneva, Switzerland

Academician ASUNCION K. RAYMUNDO

Significant positions

- National Committee on Biosafety of the Philippines
- Professor Emeritus - Institute of Biological Sciences, UP Los Baños
- Member, NAST Ad Hoc Committee on NSTW Outstanding Commercialization Award
- Member, U.P. Emerging Interdisciplinary Research (EIDR) Evaluation and Monitoring Committee
- Technical Reviewer. UPLB Basic Projects
- Member, UPLB K+12 Ad Hoc Committee
- Member, IRRI Biosafety Committee

Publications

- Opulencia, R. B., Bambase, M. E. Jr., Perdigon, K. M. D., Demafelis, R. B., Llamado, A. A., Franco, R. A. G., Mogul, R. T., and Raymundo, A. K. (2015). Copper-resistant, biofilm-forming bacteria for potential use in rehabilitation of copper-contaminated wastewater. *International Journal of Philippine Science and Technology*, 8 (2), 56–60.
- Baculi, RQ, N. B. Lantican, F. L. de los Reyes III and A. K. Raymundo, 2015 Prokaryotic Community Analysis of a Hyperalkaline Spring in the Philippines Using 16S rRNA Gene Clone Library Construction. *Phil J Science* 44:1–12.
- Aggangan, N.S., N.M. Pampolina, N.M. Cadiz, A.K. Raymundo. 2015. Assessment of Plant Diversity and Associated Mycorrhizal Fungi in the Mined-out Sites of Atlas Mines in Toledo City, Cebu for Bioremediation. *J Environ Science and Management*.
- Raymundo, A.K., R. B. Opulencia and V.V. Bautista. 2015. Laboratory Exercises on Phenotypic Methods in microbial Identification. Microbiology Division, Institute of Biological Sciences. UP Los Baños, 131p.
- Raymundo, A. K. (Ed) 2014. Assessing the Microbiological Needs of the Food and Pharmaceutical Industries. Proceedings of a Roundtable Discussion. January 27, 2014. Acacia Hotel, Alabang Muntinlupa City. National Academy of Sciences 20. 90 p. (Released in 2015).

Completed researches

- NAST Research Fellowship on Assessing the Microbiological Needs of the Food and Pharmaceutical Industries
- UP Prof Emeritus Grant- Characterization of antimicrobial compounds from an actinomycete isolated from soil of Mt. Mayon

Ongoing researches

- Effect of polyphosphate solubilizing bacteria and mycovam on the growth of narra- research with N. Aggangan
- NAST Research Fellowship, Meeting the Microbiology Education Needs of the Manufacturing Industry

S & T Policy and Program Implementation including Conference/Seminar

- Nelson, GLM, GNABrigo, and AKRaymundo. 2015. The social attitudes and acceptability of the importance of bioremediation technology in Barangay Capayang, Mogpog, Marinduque. 2015 ISSAAS National Congress and General Meeting held on March 17-19, 2015 at Pangasinan State University (PSU) Lingayen, Pangasinan
- Raymundo, A.K. 2015. Synthesizer. NCDS and other Health and Wellness Risks from the Marine Environment. NAST RTD. March 31, 2015. Jen's Hotel
- Raymundo, A.K. 2015. Message –Training Course on Watershed Management and Agroforestry. April 20–24, 2015, CFNR. UPLB, College, Laguna
- Raymundo, A.K. 2015. Through Her Microscope. Feature article in: Food Safety Trends 1(3):46.
- Raymundo, AK, ACRola and MHFDayo. 2015. Retention and success of women Scientists: the case of the university of the Philippines Los Baños. 11th AASSA Regional Workshop on “Gender Issues in Science Research and Education,” in conjunction with the Gender Summit 6 Asia Pacific 2015, 26–29 August 2015 at the Plaza Hotel, Seoul, Republic of Korea.

Honor/Recognition received

Two UP International Publication Awards

Academician AGNES C. ROLA

Significant positions

- Member, Board of Trustees, International Center for Tropical Agriculture (CIAT), Cali, Colombia
- Member, NAST 40th Anniversary Steering Committee
- Member, National Content Selection Advisory Board (NCSAB), NAST
- Member, Pesticide Policy and Technical Advisory Committee, Fertilizer and Pesticide Authority-DA

Publications

- Rola, Agnes C., Corazon L. Abansi, Rosalie Arcala-Hall, Joy C. Lizada, Ida M.L. Siason & Eduardo K. Araral Jr (2015): Drivers of water governance reforms in the Philippines, International Journal of Water Resources Development, DOI: 10.1080/07900627.2015.1060196 (ISI).
- Hall, Rosalie, J.C. Lizada, MHF Dayo, CL Abansi, ME David and AC Rola (2015). To the last drop: The political economy of the Philippine water policy, Water Policy, 17:946–962. (ISI).
- Rola, A.C., Pulhin, J.M., Tabios, G.Q., III, Lizada, J.C., and Dayo, M.H.F. 2015. Challenges of Water Governance in the Philippines. Philippine Journal of Science 144 (2): 197–208, December 2015 ISSN 0031–7683 (ISI).

- Rola, Walfredo R., Roberto F. Ranola, Damasa Magcale-Macandog and Agnes C. Rola (2015). Technological and Institutional Challenges to Food Security in the Philippines in Udaya Sekhar Nagotho (Ed) Food Security and Development: Country Case Studies, Routledge Publishing, London. pp.57–78. (ISI).

Completed researches

- Environment and Food Security Interactions Under Climate Change in Sta. Cruz Watershed (UP-CIDS funding)
- Policy Support to Organic Agriculture: Rice and Vegetable Industry in selected Areas, Philippines (DA-BAR funding)

Ongoing researches

- Water Security Under Climate Risks: A Philippine Climate Change Adaptation Strategy for the Agriculture Sector (USAID funding)
- Towards Good Water Governance for Development: A Multi- case Analysis (UP-EIDR funding)
- Collaborative Research, Development and Extension Services for Food Security (CRDES): Mainstreaming PALAYAMANAN in the Agricultural Extension System Using the CPAR Approach: The Case of Masbate and Camarines Sur (DA-RFO 5 funding)
- Impact evaluation of the closed fishing season policy in Zamboanga Peninsula (PCAARRD funding)

Honor/Recognition received

Runner up, Best paper Award Agnes R. Chupungco, Agnes C. Rola, Macrina G. Umali, Guinevere T. Madlangbayan, and Maria Cristina A. Alvarez Marketing System for Organic Rice and Vegetables in the Philippines, presented during the First National Conference in Organic Agriculture July 7–11, 2015, Benguet State University, La Trinidad, Benguet

Academician CAESAR A. SALOMA

Significant positions

- Editor-in-Chief, Philippine Journal of Science
- Member, International Advisory Board, Optical Review (Optical Society of Japan)
- Member, Editorial Board, Natural Science (Scientific Research Publishing)
- Professor, National Institute of Physics, University of the Philippines Diliman

Publications

- JA Balista and C Saloma, “Modified Inelastic Bouncing Ball Model for Describing the Dynamics of Granular Materials in a Vibrated Container,” Physica D 29, pp 17–20 (2015).

- C Saloma, GJ Perez, CA Gavile, JJ Ick-Joson and C Palmes-Saloma, "Prior Individual Training and Self-Organized Queuing during Group Emergency Escape of Mice from Water Pool" PLoS ONE 10(2): e0118508. doi:10.1371/journal.pone.0118508 (2015).
- C Saloma, "On co-authorship," Editorial, Philipp J Sc 144, Issue 1, pp 1–2 (June 2015).
- C Saloma, "Current scientific understanding and prevailing public opinion," Editorial, Philipp J Sc 144, Issue 2, pp 1–2 (December 2015).

S & T Policy and Program Implementation including Conference/Seminar

Convenor, ILUMINASYON International Year of Light 2015: A multidisciplinary symposium on Light (March 9 & 16, 2015, National Institute of Physics, UP Diliman)

Honors/Recognition received

- UP Scientist III (2015–2017)
- UP President Edgardo J Angara Fellow (March 2015–February 2016)

Academician FORTUNATO B. SEVILLA III

Publications

- K. Koirala, F. Sevilla III and J. H. Santos. Biomimetic Potentiometric Sensor for Chlorogenic Acid Based on Electrosynthesized Polypyrrole. *Sensors and Actuators B: Chemical* 222 (2015) 391–396.
- B. S. Ebarvia, I. E. Ubando and F. Sevilla III. Biomimetic Piezoelectric Quartz Crystal Sensor with Chloramphenicol-Imprinted Polymer Sensing Layer. *Talanta* 144 (2015) 1260–1265.
- R. A. Rañola, I. Concina, E. Comini, F. Sevilla III and G. Sberveglieri. Preparation and Characterisation of Surface Adsorbed Reduced Graphene Oxide/ Polyaniline Nanocomposite on Polymer Membrane for Trimethylamine Sensing. *Advanced Materials Research* 1119 (2015) 24–28.
- R. A. Rañola, K. Santiago and F. B. Sevilla III. Chemiresistor Gas Sensor Array Based on Conducting Polymers for the Discrimination of Virgin Coconut Oil. *Applied Mechanics and Materials*. 789–790 (2015) 552–557.
- R. A. G. Ranola, I. Concina, F. Sevilla III, M. Ferroni, L. Sangaletti, G. Sberveglieri and E. Comini "Room temperature trimethylamine gas sensor based on aqueous dispersed graphene". AISEM Annual Conference, 2015 XVIII, pages: 1–4.

Completed researches

- Gaseous Elemental Mercury Sensor for Atmospheric Monitoring (In collaboration with J. Bergantin, D. Albano and A. Veranga)
- Smartphone-Based Optical Sensor for Gaseous Elemental Mercury Sensor in Air (In collaboration with A. Salcedo)
- Graphene/chitosan nanocomposite for trimethylamine gas sensor (in collaboration with R. Ranola)
- Chemometric Discrimination of Beer Products in the Philippine Market Through Fourier-Transform Infrared Spectroscopy (In collaboration with K. Oliver)
- Metabolomic Approach for the Discrimination of Philippine Wood Species using Headspace Fourier Transform Infrared Spectroscopy and MWCNT/ Polymer Nanocomposite Based Electronic Nose (In collaboration with J. Kalaw)
- Chemometric Discrimination of Philippine Pandanus Species Through Headspace Analysis using Fourier-Transform Infrared Spectroscopy and Gas Chromatography – Mass Spectroscopy (In collaboration with K. Aganda and K. Santiago)

Ongoing researches

- Chemiresistor Sensor for Gaseous Elemental Mercury Based on Electrosynthesized Gold Nanoparticles (In collaboration with J. Bergantin and A. Veranga)
- Optical Sensor for Mercury (II) Ions Based on Biosynthesized Gold Nanoparticles (In collaboration with J. Guerrero)
- Aptasensor for histamine based on piezoelectric quartz crystal (In collaboration with E. Paruli and D. Albano)
- Piezoelectric Sensor for Ethylene Vapor Based on Silver(I)/Polymer Composite (In collaboration with K. Tolentino and D. Albano)
- Chemometric Discrimination of Beers through Headspace Gas Chromatography (In collaboration with A. Uy)
- Molecularly Imprinted Polymer Potentiometric Sensor for Ibuprofen Based on Electrosynthesized Polypyrrole (In collaboration with K. David)
- Development of noninvasive glucose sensing system based on glucose binding protein (In collaboration with L. Tolsa and C. Tiangco)

Honors/Recognition received

- Professor Emeritus. University of Santo Tomas, September 2015.
- Visiting Professor. Universidad Popular Autonoma del Estado Puebla, Mexico, June 2015.
- PFCS Award for Chemistry Education. 30th Philippine Federation of Chemistry Societies, April 2015.

Academician GUILLERMO Q. TABIOS III

Significant positions

Chairman, Regional Steering Committee, UNESCO-International Hydrology Program (IHP) Asia-Pacific Region (Elected October 20, 2015 for 2 years term November 2015–October 2017)

Publications

Journal/Book Chapter Publications

- Rola, A.C., Pulhin, J.M., Tabios, G. Q. III, Lizada, J.C. and Dayo, M.H.F., 2015, Challenges of Water Governance in the Philippines, Philippine Journal of Science, Vol 144 (2), December, pp. 197–208.
- Tabios, G. Q. III, 2015, Urban Flood Management Issues and Challenges: Case of Pasig-Marikina River Basin in Metro Manila, Philippines, Chapter 6 in the book “Flood Risk: The Holistic Perspective, Moving Beyond Integrated Urban Flood Management” by Zoran Vojinovic & Jingmin Huang, IWA Publishing, Netherlands, December (ISBN: 9781780405322).

Published Conference Papers in Proceedings

- Tabios, G. Q. III, 2015, Reliability Analysis of Angat Multipurpose Reservoir with climate change and future reservoir sedimentation, In Proc of 4th National Climate Conference: Local Adaptation Actions and Mitigation Co-Benefits, Manila, September 23, pp. 42–53.
- Tabios, G. Q. III, 2015, Need for Holistic Flood Risk Management, In Proc of 11th Association of Pacific Rim Universities (APRU) Research Symposium on Multi-Hazards around the Pacific Rim, University of the Philippines, Diliman, October 7–10.
- Tabios, G.Q. III, 2015, Holistic Flood Risk Management of Pasig-Marikina River Basin in Metro Manila, In Proc of the International Symposium of Integrated Actions for Global Water and Environmental Sustainability, UNESCO-IHP (Jakarta Office), Medan, Indonesia, October 21–22, pp. 75–79.

Unpublished Conference Papers

- Tabios, G. Q. III, 2015, Flood Studies in the Pasac Delta, Pampanga Delta and Bulacan Flatland: Preliminary Results, Presentation at the International Workshop on Linking Science and Society for Multi-hazards Management: Enhancing Resilience against Multi-hazards through effective Mitigation Systems and Adaptation Strategies, PAGASA, Quezon City, February 24–25.
- Tabios, G. Q. III, 2015, Mathematical Modeling as Science-Based, Decision Support Tool for Water Resources Planning and Management, Keynote Speaker at the Palawan Council for Sustainable Development, Strategic Environmental Plan Celebration, Puerto Princesa, Palawan, June 18.
- Tabios, G. Q. III, 2015, Modeling Tools for Water Resources Management, Presentation at The Innovation

Challenges in Energy and Water Resource Management sponsored by USAID-STRIDE Program, Makati, June 26.

- Tabios, G. Q. III, 2015, Mathematical Modeling and Simulations of Water Resources in Cavite, Presentation at 2015 Cavite Water Summit, Cavite State University, Indang, Cavite, August 20.
- Tabios, G. Q. III, 2015, Competing Water Uses of Angat Multipurpose Reservoir with Increased Domestic Water Demand under Future Reservoir Sedimentation and Climate Change, Asian Rice Foundation (ARF) Annual Rice Forum 2015 on Water in Agriculture: Status, Challenges, and Opportunities, PCAARRD Headquarters, Los Baños, Laguna, November 24.
- Tabios, G.Q. III, 2015, Reliability and Cost-Benefit Analyses of the Balog-Balog Multipurpose Dam versus Balog-Balog Multiple Dam Project, Angel Alejandrino Professorial Chair, Presented at Juinio Hall, UP Diliman, November 27.

Completed research

Reliability and Project Cost Analyses of NIA's Proposed Balog-balog Multipurpose Dam Project and TWEDCO's Proposed Balog-Balog Multiple Dam Project with National Irrigation Administration Project Period: December 2014–May, 2015.

Ongoing researches

- Review and Value Engineering Study of the Flood Risk Management Project for Cagayan de Oro River, Project with DPWH, Project Period: April 2015–June, 2016
- Development of Analysis and Modeling Tools as part of Decision-Support System for Managing the Environmental Quality of Manila Bay/Laguna Lake Watershed System. Project with Manila Bay Coordinating Office, DENR. Project Period: July, 2013–March, 2016.

Academician MICHAEL L. TAN

Significant positions

Chancellor, University of the Philippines Diliman

National Scientist GAVINO C. TRONO JR.

Significant positions

- Project Leader, “Development of New Areas into Seaweed Farms”
- Project Leader, Biodiversity (Taxonomy) and Distribution of the Epiphytic and Microbentic Seaweed Resources of the Philippines
- Project Leader, Production of *Halymenia durvillei* Biomass in a Land-Based Culture Facility Using Vegetative Propagules and Spores
- Project Leader, The Biodiversity of the Seaweed Flora Resources along the Pacific Seaboard of the Philippines
- Consultant, *Gracilaria* Project

- Chair, NAST Ethics Committee
- Member, NAST PSHC Committee
- Member, Scientific Posters Board of Judges
- Member, NAST Biological Sciences Division

Publications

- The seaweed flora of the Balabac Marine Biodiversity Conservation Corridor (BMCC), Southern Palawan, Western Philippines published last July 2015 at Botanic Garden Meise and Royal Botanical Society of Belgium.
- Seaweeds: A sustainable fuel source. In: Tiwari B.K. and D.J. Troy (eds.) Seaweed sustainability – Food and Non-food Applications, Academic Press, Elsevier Inc., pp 421–458.

Completed research

A project funded by DA-BAR

Ongoing researches

- Projects funded by DA-BAR and USAID
- Project funded by NAST (Research Fellowship)
- Project on Semirara Mining and Power Corporation

National Scientist TEODULO M. TOPACIO JR.

Significant positions

- Chair, National Advisory Committee for Animal Disease Control & Emergency, (NAC ADCE), Office of the Secretary, Department of Agriculture
- Chair, Committee for Drafting the Proposed Animal Industry and Veterinary Services Act (AIVSA)
- Consultant- Animal Vaccine Development, East Asia Laboratories Inc. San Mateo, Rizal
- President- Dr. Teodulo M. Topacio Foundation Inc., Quezon City

Publication

One Health Approach on the Elimination of Rabies in UP Diliman Campus. Submitted to the Office of the Chancellor, UP Diliman. Proposal submitted, approved and implemented from April, 2012 to April, 2015.

Academician FILEMON A. URIARTE JR.

Significant positions

- President, National Research Council of the Philippines, April 2014–March 2015
- Principal Consultant in the environmental impact assessment of the proposed Naga Airport, including the preparation of a land acquisition and resettlement framework plan, September 2015–March 2016
- Principal Consultant in the Technical Audit and Evaluation of MWCI and MWSI CAPEX Programs and

Projects for the MWSS Regulatory Office, October 2015–July 2016.

- Principal Consultant in the feasibility study for a 2x110 MW petcoke-fired power plant with vanadium recovery for LE System Co., Ltd. (Japan), February–November 2015.

Publications

- Authored and published the book “Understanding Corporate Social Responsibility”, published by the ASEAN CSR Network (Singapore), with support from the National Academy of Science and Technology, CFC Institute, and National Research Council of the Philippines, ISBN 978-971-8538-92-0.
- Co-authored and published the book “ASEAN Integration: Status, Issues and Prospects”, published by the Development Academy of the Philippines, ISBN 978-971-576-040-9.

Completed researches

- For the United Nations ESCAP, conducted the evaluation of the project “Promoting regional and economic cooperation in North-East Asia with particular emphasis on the Democratic People’s Republic of Korea, October–December 2015.
- For the United Nations ESCAP, conducted a comprehensive study and analysis of the ESCAP Conference Structure, a review and analysis of the conference structure of the United Nations Economic and Social Commission for Asia and the Pacific, including recommendations to restructure the ESCAP secretariat and the various legislative committees, July 2014–January 2015.
- For the United States Agency for International Development (USAID), prepared the “ASEAN-US Science and Technology Fellowship Sustainability Plan”, a comprehensive report containing recommendations on how to make the ASEAN-US S&T Fellowship Program sustainable into the future, August–December 2015.

Academician REYNALDO B. VEA

Significant positions

- Chairman of the Engineering Sciences and Technology Division (ESTD), National Academy of Science and Technology (NAST), May 2012 to present
- Chairman, Science and Technology Committee, UNESCO National Commission, August 2011 to present
- President, Transportation Science Society of the Philippines (TSSP), January 2014 to present
- Vice-President, Eastern Asia Society for Transportation Studies (EASTS), January 2014 to present.
- Chairman, Philippine Science High School Foundation, Inc., 2013 to present.

Publication

The Challenges to Philippine Education, The Philippine Engineer, Vol. 1 No. 1, Philippine Technological Council, January 2015.

Selected Conferences Attended as Speaker

- Panelists, Mind the Skills Gap: The Case of the Philippines, Policy Dialogue, British Council, Mandaluyong City, October 2015
- Plenary Speaker, Outcomes-Based and Ladderized Engineering Technologists and Engineering Technician Academic Degree Programs, 3rd Philippine Engineering Summit and AFEO Midterm Meeting, Engineering Education and Accreditation: Powered for Global Competitiveness and Innovations, Philippine Technological Council, Manila, June 2015

National Scientist BENITO S. VERGARA**Significant positions**

- Chair of the Asia Rice Foundation
- Member of the National Museum Board

**Corresponding Member
REYNALDO L. VILLAREAL****Significant positions**

- Adjunct Professor of Plant Breeding and International Agriculture, College of Agriculture and Life Sciences, Cornell University, Ithaca, New York, USA
- Retired Principal Scientist, Wheat Program, CIMMYT, Mexico
- Consultant on Rice and Wheat Breeding in Asia, Mexico and Middle East

Ongoing research

Continuing support work on NAST's Committee Project on "Improving the proficiency of mathematics in elementary education in the Philippines" headed by Acd. Ruben L. Villareal and NS Dolores A. Ramirez

Academician RUBEN L. VILLAREAL**Significant positions**

- Chair, Agricultural Sciences Division, NAST
- Member, NAST Executive Council
- Member, Steering Committee, NAST 40th Anniversary
- Member, NAST Scientific Linkages Committee
- Chair, Special Technical Committee, Scientific Career System, Department of Science and Technology (DOST)
- Member, Board of Judges, NAST Talent Search for Young Scientists

- Member, Board of Judges, Outstanding R&D Awards (Eduardo Quisumbing Medal – Basic Research and Julian Banzon Medal – Applied Research)
- NAST Focal Person, Building a Science Culture in Laguna with emphasis on Math
- Member, Governing Board, Agriculture Guarantee Fund Pool (AGFP)
- Member, Board of Trustees, Philippine Agriculture and Resource Research Foundation, Inc. (PARRFI)
- Member, Board of trustees, Coalition for Agriculture Modernization in the Philippines, Inc. (CAMP)
- Member, Advisory Board, Rice-Based Biosystems Journal
- Senior Active Member, Rotary Club of Los Baños
- Consultant Crop Science Cluster, UPLB College of Agriculture
- Member, Board of Judges, 6th Dioscoro L. Umali Achievement Award in Agricultural Development
- Member, Asia Rice Foundation, Inc. (ARF)
- Auditor, UPSILON Sigma Phi Alumni Foundation, Inc.
- Member, Selection Committee of the UPLB College of Agriculture 2015 Distinguished Alumni Awards
- Member, UPLB-College of Agriculture Alumni Association Board
- Member, UPLB Alumni Association Board
- Member, Dioscoro L. Umali Foundation, Inc.
- Chair, Resource Generation Committee, Gawad Kalinga Los Baños Ville

Ongoing researches

- Building a science culture in Laguna with Los Baños as pilot through improved Math and Science education (with NS.D. L. Ramirez and CM R. L. Villareal)
- Embryo culture and irradiation studies on native *Phaellenopsis* and *Sphatoglottis* (with P.M. Magdalita)
- Bamboo germplasm collection, characterization, conservation, and sterilization for vegetable bamboo shoot production in the Philippines (with Merdelyn T. Caasi-Lit)
- Kits Farm Bamboo Shoot Production Project: Year round production of bamboo shoots using six bamboo species under drip irrigation system for research and entrepreneurial venture (with Merdelyn T. Caasi-Lit)

S & T Policy and Program Implementation including Conference/Seminar (selected)

- Delivered Overview and Participant, RTD on Managing Philippines Coastal and Inland, Fisheries Acacia Hotel Manila, 17 March 2015
- Focal person, Moderator and Master Ceremonies RTD on GM Crops in the Philippines: Impact and Prospects, Hotel Jen, 25 March 2015

- Resource Person, Rice Policy Form with Department of Agriculture staff, and officers of the Coalition of Agriculture Modernization in the Philippines, Bureau of Soil and Water Management, 28 April 2015
- Resource person and Inducting Officer of new members, 46th Anniversary and Scientific Conference Pest Management Council of the Philippines, Davao City, 5–8 May 2015
- Resource Person, Technical Briefing on Hybrid Rice Derby Demonstration Farm, Callos, Sta. Cruz, Laguna, 2 June 2015
- NAST Representative, the 25th Anniversary of the Indonesian Academy of Sciences, and Workshop in Biosecurity, Jakarta Indonesia, 24–27 May 2015
- Speaker, Scientific Career System Orientation for the staff of the Philippine Fiber Industry Development Authority (PFDA), Quezon City, 4 June 2015
- Moderator, Modernization of Philippine Agriculture and Inclusive Growth with Dr. Arsenio M. Balisacan, NEDA Director General as speaker, CAMP general Assembly, SEARCA, 24 October 2015
- Speaker, Scientific Career System (SCS) Orientation of NAST Speakers Bureau, Sun City Suites, Gen Santos, 6 December 2015

Honors/Recognition received

- 2015 CA Outstanding Research Team Award (Acad. Ruben L. Villareal as a team Member)
- First prize, Best Poster, 3rd Philippines Nature Plant Conservation Society Inc. International Symposium, Institute of Biology, UP Diliman, Quezon City 27–29 December 2015 (Acad. Ruben L. Villareal is one of the Authors)

Academician EDWARD H.M. WANG

Significant positions

- President, ASEAN Ortho Association
- Member, East Asia Musculoskeletal Oncology Group
- Editorial Board, J of Ortho Surgery
- Manuscript Editor ASEAN Ortho Association Journal
- Chair, Department of Orthology, UP-PGH
- Head, UP-Musculoskeletal Tumor Unit

Publications

- Joo MW, Shin SH, Kang YK, Kawai A, Kim HS, Asavamongkolkul A, Jeon DG, Kim JD, Niu X, Tsuchiya H, Puri A, Wang EH, Chung SH, Chung YG. “Osteosarcoma in Asian Populations Over the Age of 40 Years: A Multicenter Study.” *Ann Surg Oncol*. 22(11): 3557–64, Oct 2015.

- Lopez-Oliva C, Wang EHM and Cañal J. “Synovial Hemangioma of the Knee: An Under-recognized Condition”. *International Orthopaedics* 39 (10): 2037–40. Oct. 2015.
- Zhiping Deng, Yi Ding, Ajay Puri, Edward HM Wang, Ashish Gulia, Claire Durban, Xiaohui Nui. “The Surgical Treatment and Outcome of Nonmetastatic Extremity Osteosarcoma with Pathological Fractures”. *Chinese Medical Journal (Engl)* 128 (19): 2605–2608, Oct 2015.

Completed research

Alpuerto BB and Wang EHM. “Interobserver and intraobserver reliability of the Enneking classification in staging benign bone tumors of the extremities in PGH patients.”

Ongoing researches

- Wang EHM, Dimayuga C, Quintos AJ, Penaranda R, Garin I, Marfori M. “Survival rates in non-metastatic Filipino Osteogenic sarcoma Patients receiving complete treatment—A Philippine Multicenter Study”
- Wang EHM, Decenteceo A, and Sison J. Is Age a Poor Prognostic Factor for Osteosarcoma—A Study spanning 20 years.
- Wang EHM, Dimayuga C, Quintos AJ. “The use of denosumab to downgrade Giant Cell Tumor of Bone from Campanacci 3 to 2”

STATEMENT OF FINANCIAL POSITION

as of December 2015 in Php

ASSETS	
Current Assets	
Cash and Cash Equivalents	20,607,336.46
Receivables	286,823.62
Inventories	635,451.23
Advances	48,718.25
Prepayments	19,596.46
Total Current Assets	21,597,926.02
Non-Current Assets	
Property, Plant and Equipment	14,553,609.90
Less: Accumulated Depreciation	7,442,089.52
Total Non-Current Assets	7,111,520.38
Other Assets	2,227,659.28
TOTAL ASSETS	30,937,105.68
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	21,814,020.59
Equity	
Accumulated Surplus/(Deficit)	9,123,085.09
TOTAL LIABILITIES AND EQUITY	30,937,105.68

NAST EXECUTIVE COUNCIL **2012 – 2015**



ACADEMICIAN
WILLIAM G. PADOLINA
President



NATIONAL SCIENTIST
MERCEDES B. CONCEPCION
Vice President



ACADEMICIAN
EVELYN MAE TECSON-MENDOZA
Secretary



NATIONAL SCIENTIST
ANGEL C. ALCALA
Member



ACADEMICIAN
JAIME C. MONTOYA
Member



ACADEMICIAN
REYNALDO B. VEA
Member



ACADEMICIAN
RUBEN L. VILLAREAL
Member

NAST SECRETARIAT



LUNINGNING E. SAMARITA DOMINGO
Director IV

OFFICE OF THE DIRECTOR



REIHVELLE A. PEREZ
Planning Officer III



VIRGINIA FRANCIA O. GAVICA
Administrative Aide VI



ROBERTO L. ARAT
Administrative Aide IV

TECHNICAL SERVICES DIVISION



GUADA B. RAMOS-DIMAYA
Information Officer V



ROWENA V. BRIONES
Information Officer III



CHARYL C. APUYAN
Information Officer II

FINANCE AND ADMINISTRATIVE DIVISION



ROSEMARIE S. ESPINO
Chief Administrative Officer



ZENAIDA T. MAPUA
Accountant III



CHONA S. SANTOS
Administrative Officer V



DENNIS M. VISTA
Administrative Aide I

PROJECT STAFF



**EUFEMIA MAE
P. FERRERAS**
Science Research Specialist II



**ANN MAUREEN
T. MALAKI**
Science Research Specialist II



**VLADIMIR JOSEPH
A. ROSLIN**
Science Research Specialist II



**JUSTINE RAVI
C. ORDUÑA**
Science Research Specialist II



MICHELLE C. CRUZ
Science Research Specialist II



DUSTIN O. IBAÑEZ
Science Research Specialist II



KATHERINE V. MUNDA
Science Research Specialist II



NIÑO M. RODIL
Science Research Specialist I



ROSARIE V. GABUYA
Science Research Specialist I



**AISLYNN FABIOLA
G. MANUEL**
Science Research Specialist I



**DAYANARA SHARMAINE
E. GABAY**
Science Research Specialist I



DARVIN S. ROSA
Science Research Specialist I



JEREME E. MAPA
Librarian



MORRIS E. DASALLA
Project Assistant III



LIEZL R. PETALIO
Clerk II



JANAPHREL A. BORJA JR.
Clerk II



LOVEN FELIX S. OPIANA
Clerk II



AIZA M. MABANSAG
Clerk II



FERDINAND C. GUTLAY
Clerk II



VANESSA MAE S. MADERA
Clerk II



ELLAÏNE P. ALMIRAÑEZ
Clerk II



MAY ANN E. OBLENA
Clerk II



LARRY D. REYES
Driver II



KRISTINE N. INOCENCIO
Scanner Operator



ERIKA FLOR G. GUTIERREZ
Scanner Operator

